

PORT OF LIVERPOOL.



ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

TO THE

PORT SANITARY AUTHORITY.

FOR THE YEAR

1919.

TOGETHER WITH OBSERVATIONS UP TO JUNE, 1920.

LIVERPOOL:

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PORT SANITARY AUTHORITY

OF

LIVERPOOL.

REPORT FOR THE YEAR 1919,

BY THE
MEDICAL OFFICER OF HEALTH.

In accordance with the duty imposed by the Local Government Board in the General Order dated March 23rd, 1891, the following Report of the operations of the Liverpool Port Sanitary Authority for the year 1919 is herewith submitted.

The Report covers the work of the Authority during the year 1919, with observations up to June, 1920, including references to the following:—

(a) Measures adopted under the Cholera, Plague and Yellow Fever and Allied Order of the Local Government Board.

(b) Measures taken to ascertain and deal with any infectious diseases existing on board vessels entering the Port of Liverpool or which have occurred during the voyage.

(c) The measures taken to reduce the number of rats on dock-quays and on ships and to ascertain the existence of plague amongst any such rats.

(d) Action taken in regard to the sanitation of vessels.

(e) The inspection of imported goods under the orders of the Local Government Board.

(f) The Medical Inspection of Aliens under the Aliens' Order, 1919.

The limits of jurisdiction of the Port Sanitary Authority are those of the Customs Port of Liverpool as defined in the Treasury Warrant of November 3rd, 1896, which are as follows:—

From the Red Stones in Hoylake on the Point of Wirral and continued up the river Mersey on the Cheshire shore to the Western side of the entrance to the Manchester Ship Canal at Eastham. Thence in an easterly direction across the said entrance and along the Cheshire shore of the river to the Ince Ferry, the western termination on that shore of the Port of Manchester. Thence crossing the said river Mersey in a supposed straight line to Dungeon Point, being the western termination on the Lancashire shore of the said Port of Manchester, and continued along the coast of the County of Lancashire to the southern boundary of the Port of Preston, *i.e.*, an imaginary line drawn in a true north-north-west direction from the inner north-west sea-mark on the beach at Formby Point. And the said Port shall include all islands, rivers, bays, channels, roads, bars, straits, harbours, havens, streams, and creeks (except the said Manchester Ship Canal) within the said limits contained, and shall extend sea-ward to a distance of three miles from low water-mark along the coast within the aforesaid limits.

The contributing Riparian Authorities are the Urban Sanitary Authorities of Birkenhead and Bootle and the Urban District Councils of Bromborough, Lower Bebington and Wallasey.

The method of advising the Port Sanitary Authority of the arrival of a ship from an infected port or with dangerous infectious disease on board is as follows:—

Every pilot is provided with a small card in book form, a facsimile of which is reproduced below.

INSTRUCTIONS TO PILOTS.

1.—Upon boarding all inward bound vessels the Pilot must ask the Master the following questions:—

- (i) *Are you all well on board?*
- (ii) *Have you called at Bombay, Calcutta, Karachi, etc., mentioning ALL the ports shown on the opposite page.*

2. If the Captain reports that he has called at any of these ports, the Pilot must report *Formby Ship for the doctor*, and must, before passing Formby Ship, shew the Quarantine Flag by day, and the Quarantine Light by night.

3. The Quarantine Flag and Light are not to be used except by vessels requiring the Port Medical Officer.

4. The boarding station is between the Princes Landing Stage on the Lancashire side, and the Alfred Dock on the Cheshire side, and between Salisbury Dock on the Lancashire side and Egremont Ferry on the Cheshire side.

NOTE.—These instructions are intended for the guidance of Pilots, and to facilitate the clearance of vessels. They will not interfere in any way with the duties of the Officers of H.M. Customs.

PORT SANITARY AUTHORITY,
LIVERPOOL.

O.48170.

INFECTED PORTS.

BOMBAY.

CALCUTTA.

KARACHI.

COLOMBO.

RANGOON.

GUAYAQUIL.

BAHIA (BRAZIL).

CEARA.

PERNAMBUCO.

MACEIO.

ALEXANDRIA.

SALONIKA.

4-2-20.

The list of ports is from time to time amended according to the prevalence of plague, cholera, and yellow fever in different parts of the world. In case of any alteration an amended list is supplied, which can be pasted in the booklet over the previous list.

Every inward bound vessel from a foreign port must take on a pilot at Point Lynas. Formby Lightship is situated in the main channel 10½ miles out, and so, when telephone communication is working satisfactorily, the Medical Officer receives ½-hour to 1 hour's notice of the arrival of a vessel requiring inspection. When telephonic communication breaks down, as it does from time to time, the first notification of the arrival of a vessel is when she is seen in the river flying the yellow flag. Under such circumstances inconvenience and delay to shipping may result.

The Customs Officers also receive information of illness on board ship, it being part of their duty to address certain questions to captains as to the health of all on board. In cases of any illness of a doubtful or infectious nature having occurred on board, immediate notice is given to the Medical Officer, who visits the ship forthwith. The Customs Officers have thus rendered a great amount of service in protecting the public health.

As heretofore, the Mersey Docks and Harbour Board has been fully alive to the necessity of keeping the Docks and City free from all serious forms of infectious disease; the Board has continued during the year to assist the Port Sanitary Authority by preventing the entrance into dock of any vessel infected or suspected of being infected with any dangerous infectious disease, until she has been boarded by the Medical Officer and the captain has received a certificate to the effect that the ship has been examined and may be permitted to dock. This certificate is handed to the Dock Master, and there are statutory powers authorising the detention of vessels infected or believed to be infected with cholera, plague, and yellow fever, but there are no statutory powers at present to prevent other ships which may have small-pox, typhus, etc., on board from entering the Docks. By the arrangement with the Mersey Docks and Harbour Board above alluded to, any dangerously infected vessel may be prevented from entering the docks until dealt with by the Medical Officer. Thanks to this valuable provision, the Port of Liverpool is exceptionally well protected.

The Mersey Docks and Harbour Board have also given the Port Sanitary Authority most valuable assistance in the work of freeing the dock quays from accumulations of materials which provide harbourage for rats. Very much valuable work has been done during the past year in this direction, also in rendering various buildings on the quays rat-proof.

The place of detention of infected vessels, or "quarantine ground," is situated in the Sloyne, some two miles up the river, and is adjacent to the Port Hospital which is situated on the Cheshire side of the river Mersey, and from which a wooden landing jetty runs down to low water.

Cases of small-pox, typhus, cholera, yellow fever, or plague, which require to be removed from a ship to the Port Hospital, are placed in the ship's boat and towed by the Medical Officer's tug to the Hospital jetty and landed.

Cases of the more common infectious diseases, such as scarlet fever, measles, etc., are removed to the City Hospitals from the Dock after the vessel has been berthed. This is a more convenient plan than to send all sea-borne cases to the Port Hospital.

The City Ambulance Staff and the City Disinfecting Apparatus have been at the disposal of the Port Sanitary Authority during the year for the removal of patients to the City Hospitals and the disinfection of large quantities of infected bedding, etc., from ships.

The boarding of vessels by the Medical Officer is done from tugs, which are hired whenever necessity arises. The disadvantages of this system, particularly in regard to the uncertainty of obtaining a tug at very short notice, are recognised, but the provision of a special launch of sufficient strength to withstand the rough weather which may be experienced in the River Mersey has had to be deferred on account of the exceptionally high prices ruling at the present time.

The duties imposed on the Port Sanitary Authorities by statute have been added to during the year by new legislation. The Pneumonia, Malaria and Dysentery Regulations which came into force on March 1st, 1919, imposed obligations on the authorities with reference to cases of these diseases occurring on board vessels in the port. Cases of Malaria, Dysentery or Trench Fever and of Acute Primary or Acute Influenzal Pneumonia are now made notifiable. Inquiries must be made in regard to the source of infection. Cases of these diseases must be removed to hospital and steps taken to prevent their spread. Numerous cases of malaria are imported from the West Coast of Africa and elsewhere. To deal with these, arrangements have been made with Professor Stephens, of the School of Tropical Medicine, whereby severe cases are admitted to their hospital and milder ones treated as out-patients. Accommodation has also been provided at the City Hospital, Fazakerley, under these Regulations. Moreover, on any ship on which cases of malaria have occurred, not only are these cases notified, but the names and destination of every person on board is recorded.

The Rats Order, 1919, and the Amending Order, 1919, have now been replaced by the Rats and Mice Destruction Act, 1919. This Act applies to a vessel as if it were land and the master of the vessel is deemed to be occupier thereof. It requires that an occupier shall take such steps as are necessary and reasonably practicable for the destruction of rats and mice on his land, or for preventing such land from becoming infested with rats and mice. In case of failure to take such steps the occupier is liable, on summary conviction, to a fine not exceeding £5, or if he has been served with a notice under this Act, not exceeding £20. The master of a ship who does not take all necessary reasonable practicable steps for preventing the escape of rats from his ship after receipt of a notice under the Order, is liable to a fine not exceeding £20. The Act is quoted *in extenso* in the Appendix to this Report.

Plague is a disease of rats, and the danger of the importation of plague is intimately associated with the prevalence of rats on ship-board. It may be mentioned here that the Spanish Government has recently insisted that in future all ships entering Spanish ports from the British Isles must be able to present a certificate stating that they have been properly fumigated at the port whence they sailed.

The Aliens Act was in abeyance during the War, as special arrangements were made for dealing with aliens desiring to enter this country, but the Aliens Order of 1919 came into force on April 1st, 1920. The Port Sanitary Authority is mainly concerned with the Medical Provisions of this Act, the purpose of which is to secure the exclusion of aliens

(1) whose presence is likely to be a danger to the health of the people in this country; or

(2) who are likely to become a charge upon public funds, either by reason of their existing or probable future incapacity to support themselves and their dependants or because their condition is such as to render it probable that they will need treatment and care which they are unable to provide from their own resources.

With the above objects in view, every alien landing at Liverpool who intends to remain in this country for a period of three months or longer, is medically examined by the Medical Officers to the Port Sanitary Authority, who report to the Immigration Officers on the state of health of the alien. All aliens who are lunatics, idiots, or mentally deficient,

and all whose presence is likely to be a danger to the public health, must be rejected. But in the case of other conditions found by the Medical Officer it remains for the Immigration Officers to satisfy themselves, before they give permission to land, that such aliens will not become a charge on public funds.

Plague.

Throughout the year plague has maintained its world-wide distribution. As always, the East has continued to be the chief sufferer, many thousands of deaths from plague having occurred in India and China. There have also been serious outbreaks in Korea, Indo-China, Java, Colombo, Egypt, Mesopotamia, South America, Brazil and Ecuador.

Isolated cases have occurred in Constantinople, Greece, Spain, France, Italy, and Great Britain, showing the necessity for continuing every precaution to prevent the spread of this deadly disease over Europe.

The ports scheduled as plague-infected during the year were Bombay, Calcutta, Karachi, Colombo, Rangoon, Guayaquil, Bahia, Ceara, Pernambuco, Maceio, Alexandria, and Salonica.

Only one case of plague was landed at Liverpool, viz., on the s.s. City of Sparta, from Bombay. A native fireman from this vessel was removed to hospital in Bombay on March 26th, 1919, and died on March 28th. On the same vessel a soldier, Pte. S. W. Freeman, died of plague at sea on April 21st. The "City of Sparta" arrived at Liverpool on April 29th, 1919, when two of the native crew were removed to isolation hospital as suspected cases. One of these men died of plague on the 17th May, 1919.

Rats and Plague

The rat-catchers of the Port Sanitary Authority catch, not only with the idea of reducing the number of rats, but to ensure the early detection of plague amongst them, whether on ships or on dock-quays. All dead or sick rats and many others, particularly from suspected ships, are sent for bacteriological examination. In cases of doubt, rats are also submitted to examination by the City Chemical Analyst, who may discover the presence of poison, *e.g.*, barium, phosphorus, arsenic, thus satisfactorily deciding the cause of death.

TABLE 2.

CITY AND PORT OF LIVERPOOL.
RETURN OF RATS CAUGHT, EXAMINED OR DESTROYED.

| DATE. | CITY. | | | | PORT. | | | | CITY. | | PORT. | | TOTAL CAUGHT |
|-----------------|------------------------------------|---------|-------------------|--------|--------|--------|-------------------|--------|----------------|-----------------|----------------|-----------------|------------------------|
| | Ware- houses, Stores, &c. | Sewers. | Other Sources. | Total. | Ships. | Quays. | Other Sources. | Total. | Ex- amined. | Des- troyed. | Ex- amined. | Des- troyed. | |
| 1919. | | | | | | | | | | | | | (City and Port.) |
| January | 217 | 68 | 122 | 407 | 672 | 69 | — | 741 | 25 | 382 | 544 | 197 | 1,148 |
| February | 267 | — | 151 | 418 | 544 | 63 | — | 607 | 26 | 392 | 451 | 156 | 1,025 |
| March | 169 | — | 239 | 408 | 419 | 91 | — | 510 | 24 | 384 | 407 | 103 | 918 |
| April | 290 | 2 | 284 | 576 | 624 | 77 | — | 701 | 20 | 556 | 543 | 158 | 1,277 |
| May | 447 | — | 301 | 748 | 758 | 105 | — | 863 | 68 | 680 | 682 | 181 | 1,611 |
| June | 551 | — | 209 | 760 | 431 | 84 | — | 515 | 74 | 686 | 388 | 127 | 1,275 |
| July | 439 | — | 151 | 590 | 848 | 72 | 1 | 921 | 129 | 461 | 556 | 365 | 1,511 |
| August | 232 | — | 32 | 264 | 711 | 39 | 7 | 757 | 78 | 186 | 557 | 200 | 1,021 |
| September | 530 | — | 130 | 660 | 564 | 58 | — | 622 | 81 | 579 | 537 | 85 | 1,282 |
| October | 567 | — | 2,253 | 2,820 | 1,127 | 207 | 64 | 1,398 | 1,413 | 1,407 | 1,213 | 185 | 4,218 |
| November | 364 | — | 206 | 570 | 711 | 213 | 19 | 943 | 71 | 499 | 778 | 165 | 1,513 |
| December | 625 | — | 869 | 1,494 | 1,562 | 167 | — | 1,729 | 179 | 1,315 | 654 | 1,075 | 3,223 |
| | 4,698 | 70 | 4,947 | 9,715 | 8,971 | 1,245 | 91 | 10,307 | 2,188 | 7,527 | 7,310 | 2,997 | *20,022 |

Number of rats caught (City) 9,715
 Number of rats examined (City) 2,188
 Number of rats caught (Port) 10,307
 Number of rats examined (Port) 7,310
 Total Number of rats caught (City and Port) 20,022
 Total Number of rats examined (City and Port) 9,498

* These figures do not include rats caught or destroyed by various shipping firms employing their own rat-catchers or rat-catching companies which totalled in the Port on vessels and quays 50,241; in the City in Warehouses 4,698 and in Sewers and other places 5,017.

Amongst the 7,310 rats examined bacteriologically during the year 1919, twenty were found to be plague infected. Nearly all these infected rats were caught in the first fortnight of October, and their occurrence appears to be closely associated with the arrival of the s.s. "Musician" in this port. An extract of the report on this ship is therefore given on page 15.

On November 18th, 1919, the Medical Officer of Health reported on the prevalence of plague in various parts of the world, and notably an extension to Naples and Barcelona, and he recommended that Professor Newstead, Consultant Entomologist to the Corporation, be asked to undertake an investigation into the different species of fleas at present infesting rats, with the object of determining the extent to which the species of flea known to convey plague is prevalent.

He recalled the fact that Professor Newstead some years ago carried out an investigation into the habits of the House Fly with valuable results.

A first interim report by Professor Newstead upon the subject of an investigation into plague-carrying rat-fleas was received on the 15th July. Briefly, the method pursued was to divide the locality into 3 zones, namely, zone I, including ships in port; zone II, including docks and neighbouring warehouses, and zone III, covering the rest of the city.

The result of the examination so far as it has extended, shews that fleas capable of carrying plague were present in 41 out of 147 of the rats taken from ships, and in 3 out of 14 rats taken from docks and warehouses adjacent thereto. With regard to zone 3, that is to say the city, excluding dock areas, no fleas capable of carrying plague were found.

It is interesting to note that the average number of fleas per rat varies widely in the various districts, the warehouse rats being the most infested with fleas, and the ship rats the least, but it is obvious that the kind of fleas rather than the number is the important factor.

Professor Newstead's First Interim Report on the investigation for the quarter ending July 10th, 1920, is as follows:—

The three " zones " referred to in the Report are :—

" Zone I." Ships in Port.

" Zone II." (a) Docks.

(b) Neighbouring Warehouse District.

" Zone III." Rest of City.

The facts to be drawn from the records of our observations are given in the body of the report; the most important of these, however, is the absence, so far, of the Indian Plague flea (*Xenopsylla cheopis*), from the City zone (Zone III). On the other hand, three rats from the Docks and forty-one rats from ships were found infected with the Indian Plague flea. The occurrence of the last named in such a large proportion of ship-rats clearly emphasises the necessity of the continuance of your most excellent measures for preventing rats from reaching shore.

| | |
|--|-----|
| Total number of rats examined | 264 |
| No. of rats from Zone I.—Ships | 147 |
| " " II.—(a) Docks | 14 |
| " " II.—(b) Warehouses, etc..... | 83 |
| " " III.—City | 20 |
| Total number of Fleas taken from rats | 835 |
| No. from Zone I.—Ships..... | 275 |
| " II.—(a) Docks | 59 |
| " II.—(b) Warehouses, etc..... | 441 |
| " III.—City | 60 |

The Fleas found were of three species, *i.e.* :—

Xenopsylla cheopis, Indian Plague flea.

Ceratophyllus fasciatus, common rat flea of temperate climates.

Leptopsylla musculi, common mouse flea.

Numbers of each species as follows :—

| | |
|--------------------------------------|-----|
| <i>Xenopsylla cheopis</i> | 162 |
| <i>Ceratophyllus fasciatus</i> | 596 |
| <i>Leptopsylla musculi</i> | 77 |

ZONE I.—SHIPS.

| | |
|--|--------------|
| Number of rats examined | 147 |
| | (All black). |
| „ <i>Xenopsylla cheopis</i> | 152 |
| „ <i>Ceratophyllus fasciatus</i> | 121 |
| „ <i>Leptopsylla musculi</i> | 2 |
| Average number of fleas per rat | 1.9 |
| Number of rats infected with <i>Xenopsylla cheopis</i> | 41 |

ZONE II.—A DOCKS.

| | |
|--|----|
| Number of rats examined | 14 |
| „ black rats examined | 10 |
| „ brown rats examined | 4 |
| „ rats infested with <i>Xenopsylla cheopis</i> | 3 |

Numbers of fleas found:—

| | |
|---------------------------------------|------|
| <i>Xenopsylla cheopis</i> | 10 |
| <i>Ceratophyllus fasciatus</i> | 49 |
| Average number of fleas per rat | 4.07 |

ZONE II.—B WAREHOUSES, ETC.

| | |
|---|------|
| Number of rats examined | 83 |
| „ black rats examined..... | 64 |
| „ brown rats examined..... | 19 |
| „ rats infested with fleas..... | 68 |
| Total number of fleas found on rats | 441: |

The fleas represented two species, *i.e.*, *Ceratophyllus fasciatus* and *Leptopsylla musculi*.

Numbers of each species as follows:—

| | |
|--------------------------------------|-----|
| <i>C. fasciatus</i> | 367 |
| <i>L. musculi</i> | 74 |
| Average number of fleas per rat..... | 5.3 |

ZONE III.—CITY.

| | |
|--|-----|
| Number of rats examined..... | 20 |
| „ black rats examined..... | 2 |
| „ brown rats examined..... | 18 |
| Total number of fleas taken..... | 60 |
| Number of <i>Ceratophyllus fasciatus</i> | 59 |
| „ <i>Leptopsylla musculi</i> | 1 |
| Average number of fleas per rat..... | 3.0 |

So far as the investigation has gone, the records show that only the rats from ships and neighbouring docks show the presence of plague transmitting fleas.

S.S. "MUSICIAN."

This vessel entered the Port of Liverpool on 24th September, 1919. During the voyage she touched at Maceio, Pernambuco, Cabadello, Las Palmas.

She entered the Brunswick Dock and discharged a deck cargo of bananas. Certain crates of bananas went direct from the "Musician" to Belfast.

On September 26th six dead rats were found on the vessel, and these were forwarded to the City Bacteriologist and City Analyst forthwith. On September 29th the City Analyst reported that there was no evidence of poison in the rats. The vessel was scheduled as plague suspected, and the usual precautions were enforced. On September 30th three more dead rats were found and forwarded to the City Bacteriologist, who reported on October 2nd that these rats had died of plague. The Ministry of Health subsequently confirmed this report.

The source of infection was stated to be a case of onions containing four dead rats taken on board as ship's stores at Maceio on September 4th. Seven dead rats were, in addition, found in the stores on the homeward voyage.

No human cases occurred.

PRECAUTIONS TAKEN.

Vessel breasted off six feet from the quay. Rat guards placed on all mooring ropes. Gangway whitewashed and hoisted when the vessel was not working.

Extra labour engaged, and cargo searched for rats.

Vessel searched from stem to stern for rats before, during and after discharge of cargo.

Names and addresses of crew obtained. Crew visited.

Names and addresses of dock labourers, carpenters, and other workers obtained, and those absent from duty through sickness visited.

Rat-catchers kept continuously at work on the ship and the quays.

Matchboard lining and flooring in lazarette was stripped and burnt, the whole of this apartment was sprayed thoroughly with kerosene before, during and after the procedure.

Dead rats, when found, were immediately disinfected, and the vicinity of the corpse well sprayed with kerosene emulsion.

Local disinfection of different parts of the ship was carried on during unloading.

Complete and simultaneous disinfection of the whole vessel when empty.

| | |
|--|-------|
| Number of dead rats found before fumigation | 182 |
| Number of dead rats found after fumigation | 25 |
| Number of rats trapped | 13 |
| | <hr/> |
| | 220 |
| | <hr/> |

All men employed in this work were protected from fleas by suitable clothing. Workers on the ships and quays were kept under observation for seven days after the fumigation of the ship.

Within the next week plague infected rats were found in the following areas:—Toxteth Dock and Brunswick Dock, which are close to where the “ Musician ” was lying, and at Riverside Station, close to Prince’s Dock, where the crates of bananas from the “ Musician ” were shipped to Belfast.

This incident served as a useful text for the campaign against rats, and enabled the Port Sanitary Staff to push home the necessity for the rat-proofing of buildings and the prevention of the accumulation on the and enabled the Port Sanitary Staff to push home the necessity for the quays of anything likely to offer harbourage for rats. They availed themselves to the full of the stimulus provided, and a great improvement resulted.

In this connection it may be stated that the question of the discharge of plague infected ships overside into lighters in the river was fully discussed. The decision was that such a procedure could not be adopted at Liverpool on the following grounds:—

(1) *Danger*.—A vessel moored in the river is a danger to navigation. The safest part of the river in this respect is the Sloyne, but even here the risk is not entirely obviated.

The rise and fall of the tide in the Mersey is about 30 feet, and the risk of storm and fog must be taken into account. As the weather and tidal conditions do not favour lightering it is rarely used in the Mersey, and then only to lighten vessels arriving in port too deeply laden to dock.

(2) *Risk to Cargo*.—The possibility of injury to or loss of cargo by this method of discharge is considerably greater than that obtaining at the quayside in dock, and Insurance Companies would require additional premiums.

(3) *Delay*.—The time required to discharge a vessel by lighter would be from three to five times that required to discharge her in dock. In the only part of the river where the vessel could safely be moored, namely, the Sloyne, a moderate south-easterly breeze would prohibit work, and during fog or strong tides or rough weather, work would have to be entirely suspended.

(4) *Cost*.—The cost would be enormous. Lighters would have to be imported or specially built. There are very few lighters of any sort in the port, and such as there are have been built for canal traffic and are constantly in use. Towage of the lighters would be a further costly item. Moreover the crew would have to be maintained on board the vessel and their wages paid during the time she was moored in the river. Steam would have to be kept up continuously in case the vessel dragged her anchor.

By such a method, rats would certainly be prevented from going direct from an infected ship to the quay, but there still remains the possibility of rats being conveyed ashore in the cargo. This can only be obviated by careful inspection of each bale or bag as it is taken ashore out of the ship. Such a search cannot be satisfactorily made in the lighter, but can be much more efficiently carried out on the quay.

An alternative suggestion was made, viz., mooring the vessel in dock 20 or 30 feet from the quay and discharging by lighters.

The only suitable dock for this would be the Float, Birkenhead.

Most of the dangers of the first scheme would be avoided, but there is only one dock in which this method could be adopted, and even then a vessel moored in the dock would seriously interfere with the handling and manoeuvring of other ships docking and passing through. Further, the delay and the extra cost would still be very great, the shortage of lighters and necessity for skilled labour would remain a great difficulty, and the possibility of rats going ashore in the cargo would still maintain.

It is considered that the present methods of dealing with infected ships have proved very satisfactory in the past, and carefully and conscientiously carried out, these methods may be relied upon to keep the port free from plague infection.

The following extract from the Public Health Reports issued weekly by the United States Public Health Service is quoted as of interest in showing the way in which plague may be spread.

PLAGUE ON VESSEL.

STEAMSHIP "NANKIN" AT PORT SAID.

The steamship "Nankin" from London via Marseilles arrived at Port Said, Egypt, with nine cases of plague on board occurring among the crew from July 10th to the date of arrival at Port Said. On July 13th two additional cases were removed from the vessel, and to July 17th, 1919, a total of 17 cases was reported landed from the "Nankin" at Port Said.

The "Nankin" left London June 26th, Marseilles July 6th, and Malta July 8th, 1919. The finding of six dead rats during the voyage was reported to the ship's surgeon. At Marseilles the "Nankin" took on mail from Rotterdam and merchandise, and the ship's officer who had charge of the loading stated that a great number of fleas were observed on the bags containing the mail and merchandise. On July 10th a cat on board was found to be sick with a cervical bubo and a kitten was found with inguinal plague. On the same date a Lascar member of the crew was taken ill but

without buboes, and on July 11th three other Lascars were attacked but exhibited no buboes. On July 12th a Lascar was taken ill with buboes present and buboes developed in the four cases previously reported.

The history of the "Nankin" shows that the vessel left Bombay May 3rd, 1919, stopping at Aden, where two suspect cases of plague were landed. On reaching Suex the vessel received telegraphic report that the cases landed at Aden had been declared negative. The "Nankin" arrived at London May 29th, remaining there until June 26th, leaving the Thames June 27th, 1919.

Cholera.

No cases of Cholera occurred in Liverpool or on Liverpool-bound vessels during the year, though the disease remained epidemic in the usual centres in the Middle and Far East.

Typhus Fever.

Typhus was widespread throughout the year, not only in the East, but also in Europe, particularly in Russia, Austria, and Serbia. A considerable outbreak occurred in Italy in May, but was chiefly amongst Austrian prisoners of war. In Great Britain a few cases occurred in Glasgow, Dundee, and Cork.

Only one case of Typhus occurred on Liverpool-bound vessels, this being the chief steward of the s.s. "Dalraza" from Alexandria, arriving at Liverpool on May 16th, 1919. The case was diagnosed by the Port Medical Officer, who boarded the ship, and was promptly removed to the Netherfield Road Hospital. Measures were taken for the disinfection of the crew and the ship, and no further cases occurred.

Notification of Infectious Disease.

The Public Health (Acute Encephalitis Lethargica and Acute Poliomyelitis) Regulations and also the Public Health (Pneumonia, Malaria, Dysentery, etc.) Regulations, became operative in 1919.

The following diseases are, therefore, notifiable within the area of the Liverpool Port Sanitary Authority:—

| | |
|--------------------------|-----------------------------|
| Cerebro-spinal Fever, | Plague, |
| Chicken-pox, | Pneumonia, Acute Influenzal |
| Cholera, | Pneumonia, Acute Primary, |
| Continued Fever, | Polio-Encephalitis, Acute, |
| Diphtheria, | Poliomyelitis, Acute, |
| Dysentery, | Puerperal Fever, |
| Enteric Fever, | Relapsing Fever, |
| Erysipelas, | Scarlet Fever or Scarlatina |
| Encephalitis Lethargica, | Smallpox, |
| German Measles, | Tuberculosis (all forms), |
| Measles, | Trench Fever, |
| Malaria, | Typhoid Fever, |
| Membranous Croup, | Typhus Fever, |
| Paratyphoid Fever, | Yellow Fever. |

The termination of the war, with the consequent cessation of the arrival of thousands of American troops in Liverpool, and the gradual defervescence of the Influenza Epidemic, greatly reduced the work of the Port Sanitary Authority in regard to infectious disease. At the same time, owing to the revival of the ordinary civilian traffic, the table on page 26 shows an increase in the numbers of the ordinary infectious diseases, such as scarlet fever, enteric fever, diphtheria, measles, chicken-pox, arriving at the port.

Smallpox.

The following is an account of the vessels entering the Port of Liverpool with Smallpox on board:—

The s.s. "Ardeola" arrived on February 3rd from Lisbon. The Master reported all well on board, but on February 4th the 2nd Engineer was discovered at his house to be suffering from smallpox. He was removed to New Ferry Hospital. The crew, two passengers, and two contacts at home were vaccinated and the ship disinfected. No further cases occurred.

The s.s. "Castalia" arrived on February 20th from Bombay. Two soldiers were found to be suffering from Smallpox and were removed to New Ferry Hospital. Seventeen military contacts were detained at Sparrow Hall and 156 members of the crew were vaccinated. No further cases occurred.

The s.s. "Kursk" arrived on March 2nd from Saloniea and Alexandria, having landed troops and passengers at Southampton on February 28th. On March 3rd the 5th Engineer was found at his home in Bootle suffering from Smallpox. He was removed to New Ferry Hospital.

The s.s. "Desna" from Rio de Janiero and Lisbon arrived on March 27th. On the 7th April a trimmer, who attended the Royal Southern Hospital, was discovered to be suffering from Smallpox, and was sent to New Ferry Hospital. The occupants of a Seaman's Boarding House, where this man had been residing, were inspected, and the necessary vaccinations carried out. No further cases occurred.

The s.s. "Ernemore," for Manchester, from Alexandria, arrived at Liverpool on July 1st. The 3rd Engineer was found to be suffering from Smallpox, and was removed to New Ferry Hospital. All the passengers and crew, with the exception of one, were vaccinated, and the ship disinfected. No further cases occurred.

The s.s. "Hildebrand," from Manaos, Para, and Portugal, arrived on September 3rd, and the 2nd Engineer was found to be suffering from Smallpox. Two hundred and one vaccinations were performed, and no further cases resulted.

Malarial Fever.

There are still an enormous number of cases of Malaria occurring on board ships from the West Coast of Africa, and there is great scope for preventive measures in this direction.

During the year 108 vessels arrived in the port on which 529 cases of Malaria had occurred during the voyage. Of these, 83 were still seriously ill on their arrival at Liverpool.

Anthrax.

Isolated cases of this disease occurred during the year, chiefly amongst those engaged in the handling of various animal products, such as hides, skins, hair and wool. There were 14 cases reported to the Authorities, the infecting material being chiefly wool, skins and hair.

Several cases were reported to the Health Department as having been probably caused by infected shaving brushes. Since 1916 attention has been directed to the possibility of shaving brushes conveying infection and large numbers have been bacteriologically examined by the City Bacteriologist. In consequence of a large number of shaving brushes having been found to be infected with Anthrax germs, enquiries were extended, and it was found that large numbers of Japanese shaving brushes had been imported and distributed through London to Liverpool and other districts. Steps were taken to prevent the sale of these brushes.

Early in 1919 a Consultative Council was formed by the Board of Trade to enquire into the Brush Industry and the importation of foreign made brushes. This Council strongly recommended that the Board of Trade should deal with the importation of foreign made brushes because of the insanitary conditions under which they were manufactured.

On 9th February, 1920, an Order in Council was made, Section 19 under the Anthrax Prevention Act, 1919, prohibiting the importation into the United Kingdom of shaving brushes manufactured and exported from the Empire of Japan.

A table of cases of Anthrax reported during the year 1919 is herewith appended.

TABLE No 3.
CASES OF ANTHRAX REPORTED DURING THE YEAR 1919 IN CONNECTION WITH
THE HANDLING OF ANIMAL & OTHER PRODUCTS.

| Date, 1919. | Sex. | Occupation. | Suspected Material. | Origin of Material. | Situation of Pustule. | Severity and Result. |
|----------------|------|-------------------------------|--------------------------|--------------------------------------|--------------------------------|--|
| March 27..... | M. | Wool Porter | Wool | Indian Ports | Under chin, right side | Recovery. The pustule was typical. Recovery. |
| March 27..... | M. | Fireman | Hair | N. & S. America and British Isles | Back of neck | Recovery. |
| April 15..... | F. | Wooden case maker | Unknown | | Left thumb | Pustule typical excision and recovery. Death. |
| April 15..... | M. | Dock Labourer | Hides..... | Indian Ports | Left breast | Pustule excision and recovery. Typical pustule and oedema. Recovery. |
| April 19..... | F. | Feathers and Hair | Horse and Pig Hair | America | Left forearm, near elbow | Recovery. |
| May 31..... | M. | Dock Labourer | Wool and Hides ... | Australian and Chinese Ports ... | Forehead | Recovery. |
| Oct. 18..... | M. | Warehouse Porter | Goat Skins | W.C. Africa | Forehead, centre | Recovery. |
| Nov. 1..... | F. | Housewife..... | Unknown | | Chin | Recovery. |
| Nov. 11..... | M. | Warehouseman | Horsehair | S. American Ports | Neck, behind ear | Death. |
| Nov. 20..... | M. | Motor Car Agent | Shaving brush | Unknown | Chin. | Death. |
| Nov. 29..... | M. | Carter | Jute and hides ... | Indian Ports | Forehead, centre | Recovery. |
| Dec. 6..... | M. | Hide Porter | Hides..... | W. African Ports... | Right side of neck | Recovery. |
| Dec. 11..... | M. | Weighman in Wool Warehouse | Wool | East Indian Ports | Right side of neck | Recovery. |
| Dec. 22..... | M. | Seaman (oiler) | Shaving brush ? ... | Unknown | Left side of neck and over jaw | Recovery. |

DISINFECTION OF HAIR AND WOOL.

The liability of infection from the handling of various dangerous wools and hair has long been recognised. Hitherto these infected wools have been dealt with at the Factories under special regulations of the Home Office. The danger was much minimised by these methods, but it has been finally decided by the recent Departmental Committee that the existing regulations are unequal to the task of coping with the prevention of the disease, and it was felt that further precautions were necessary. The Committee recommended that the policy of attempting to control the danger of infection from Anthrax in wool and hair by Regulations under Factory Acts should be abandoned and instead the principle of compulsory disinfection substituted, and that this disinfection should be permitted only at Central Disinfecting Stations. It was pointed out that the Ports through which wool is exported to this Country appeared to offer advantages as the points at which Central Disinfecting Stations should be established.

It is the intention of the Home Office to establish an experimental disinfecting station at Liverpool for the disinfection of all imported dangerous wools. The building will be erected in close proximity to the Dock Board Wool Warehouse.

It is intended that all such wools shall be allowed to land only at fixed Ports, unless accompanied by a certificate of disinfection.

The process of disinfection which has been arranged is in the following four stages:—

Stage 1.—Preliminary treatment, consisting of agitation (by means of rakes which thrust the wool through liquid as in scouring machinery) for 20 minutes in a solution of soap in water (preferably also containing an alkali like sodium or potassium carbonate) at a temperature of 102° to

110° F., assisted by squeezing through rollers. The protection afforded to the spores is by this means removed, the spores are rendered susceptible to the action of disinfectants, and the wool is cleansed.

Stage II.—Disinfecting treatment, in which the material is agitated by similar means for 20 minutes in a 2-2½ per cent. solution of formaldehyde in water at a temperature of 102° F., assisted by squeezing through rollers. In this stage the bulk of the anthrax spores is destroyed, those only surviving which are embedded in remnants of bloodclots which in a few instances may have escaped complete disintegration during Stage I, but which become saturated with formaldehyde solution.

Stage III.—Drying in a current of air heated to 160° F. The moisture in the wool is driven off, and nearly all the surviving spores in any blood remnants are destroyed.

Stage IV.—Standing for some days to ensure, by the progressive action of the formaldehyde which remains in the blood remnants, the complete destruction of the few weakened spores which have survived Stage III.

TABLE 4.

INFECTIOUS DISEASE.

The actual number of cases of infectious sickness amongst civilians landed from vessels arriving in the port of Liverpool during the years 1918 and 1919, and the comparison with the average of the preceding 10 years, is shown in the following table:—

| Diseases. | Number of Cases. | | Average for the 10 years preceding 1918. |
|-------------------------------------|------------------|-------|--|
| | 1918. | 1919. | |
| Smallpox | 2 | 7 | 4·9 |
| Scarlatina | 2 | 30 | 14·9 |
| Cerebro Spinal Meningitis | 0 | 2 | 0·4 |
| Poliomyelitis | 0 | 0 | 0·0 |
| Typhus | 0 | 1 | 0·0 |
| Enteric Fever | 11 | 25 | 37·0 |
| Do. (suspected) | 0 | 6 | 0·0 |
| Diphtheria | 7 | 11 | 8·8 |
| Measles | 8 | 12 | 29·4 |
| German Measles | 4 | 0 | 1·7 |
| Whooping Cough | 0 | 0 | 0·1 |
| Erysipelas | 5 | 3 | 6·2 |
| Chicken Pox | 2 | 21 | 8·5 |
| Cholera and Choleraic Diarrhœa .. | 0 | 0 | 0·6 |
| Yellow Fever | 0 | 0 | 0·5 |
| Plague | 0 | 1 | 0·4 |
| Suspected Plague | 0 | 0 | 3·9 |
| Puerperal Fever | 0 | 0 | 0·0 |
| Phthisis | 21 | 34 | 48·4 |
| Tuberculosis (other forms of) | 1 | 1 | 0·1 |
| Anthrax | 0 | 1 | 0·0 |
| *Pneumonia and Influenza | 0 | 86 | 0·0 |
| *Malaria | 0 | 83 | 0·0 |
| *Trench Fever | 0 | 0 | 0·0 |
| *Dysentery | 0 | 6 | 0·0 |
| Totals | 63 | 330 | 165·8 |

* Notifiable from 1st March, 1919.

TABLE 5.

INFECTIOUS DISEASE.

The number of cases of infectious sickness reported to have occurred on Liverpool-bound ships during the years 1918 and 1919, and which were disposed of prior to the arrival of the vessel at this port, and the average of such cases for the preceding 10 years, are as follows:—

| Diseases. | Number of Cases. | | Average for the 10 years preceding 1918. |
|-----------------------------------|------------------|-------|--|
| | 1918. | 1919. | |
| Smallpox | 6 | 16 | 17·6 |
| Scarlatina | 0 | 1 | 1·2 |
| Cerebro Spinal Meningitis | 5 | 1 | 0·7 |
| Enteric Fever | 4 | 5 | 17·1 |
| Diphtheria..... | 5 | 2 | 2·9 |
| Measles | 3 | 5 | 7·9 |
| German Measles | 0 | 0 | 1·1 |
| Erysipelas | 0 | 0 | 1·1 |
| Chicken Pox ... | 0 | 4 | 4·4 |
| Cholera and Choleraic Diarrhœa. | 0 | 0 | 5·5 |
| *Malaria | 0 | 380 | 0·0 |
| Yellow Fever | 0 | 0 | 3·6 |
| Plague | 0 | 2 | 2·1 |
| Suspected Plague..... | 0 | 0 | 0·9 |
| Phthisis..... | 0 | 7 | 6·4 |
| Tuberculosis (other forms of) ... | 0 | 6 | 0·0 |
| *Pneumonia and Influenza..... | 0 | 23 | 0·7 |
| *Dysentery | 0 | 2 | 0·0 |
| Totals..... | 23 | 454 | 73·2 |

* Notifiable from 1st March, 1919.

The following Table gives particulars of the 217 vessels
Disease on Board, with the measures adopted in each case:—

TABLE 7.

| Date 1919. | Name of Vessel. | Where from. | Nature of Sickness. | Hospital to which Patient was removed. |
|---------------|-------------------|---------------------------|---------------------|--|
| Jan. 4 | Eaglet ... | In the Salt house Dock | Scarlatina ... | Sparrow Hall |
| Jan. 10 | Merian ... | Galveston ... | Enteric Fever | Northern ... |
| Jan. 10 | Valentin ... | Oporto ... | Small-pox ... | ... .. |
| Jan. 12 | Shidzoaka Maru | Colombo ... | Enteric Fever | Northern ... |
| Jan. 13 | Lurcher ... | Glasgow ... | Diphtheria ... | Fazakerley ... |
| Jan. 16 | Gulf of Suez... | Lisbon ... | Small-pox ... | New Ferry ... |

reported on their arrival as having, or having had, Zymotics

REMARKS.

The patient, a Naval fireman was removed to hospital and the vessel and bedding disinfected.

The patient, the Chief Engineer who had gone to his home in the City, was removed to the David Lewis Northern Hospital, and the vessel and bedding disinfected.

This vessel left Oporto on December 2nd, arrived at Liverpool on the 7th and docked on the 9th, when she was visited by a Port Sanitary Inspector, and all on board were reported well. A passenger who arrived by this vessel and proceeded to Blackhill, Durham, developed a rash on the face and neck on December 12th. On the 3rd of January three cases of smallpox were notified from the house in which he stayed. He had then left for Newcastle-on-Tyne, from the Medical Officer of Health of which town notification of these occurrences was received on January 8th. The vessel was visited by the Assistant Port Medical Officer in Liverpool, and the crew were inspected, and all found well. This case illustrates how persons arriving in apparent good health, but incubating smallpox, may spread the disease in distant parts of the country.

One of the crew, a trimmer, was removed to Hospital, and the vessel and bedding disinfected.

The patient, one of the crew, was removed to Hospital, and the vessel and bedding disinfected.

On the 16th January, a case of smallpox was reported from Bootle, the patient, a ship scaler, was taken ill on the 9th of January. He was removed to the Port Hospital on January 26th, where enquiry showed that his brother, a fireman on the s.s. "Gulf of Suez," had returned from Lisbon on the 27th December, fifteen days before his brother's eruption. On arrival he had spots on his face, and had been ashore at Lisbon, where he was doubtless infected. On the 23rd and 24th December, he was taken ill and was off duty, being seen by the Captain who gave him a bottle of medicine on the 25th. The spots came out, and he felt better and returned to duty. He was not seen by the Captain after the appearance of the rash, but was attended by a medical man for blood poisoning due to drink.

| Date 1919 | Name of Vessel. | Where from | Nature of Sickness. | Hospital to which Patient was removed. |
|--------------|------------------------------------|----------------|---------------------|--|
| Jan. 16 | Gulfof Suez... <i>continued</i> | Lisbon ... | Small-pox ... | New Ferry ... |
| Jan. 17 | City of Naples | Madras ... | Chicken-pox | New Ferry ... |
| Jan. 22 | Anselm ... | Rio Janeiro... | Small-pox .. | ... .. |
| Jan. 30 | Metagama ... | St. Johns ... | Chieken-pox | New Ferry ... |
| Feb. 3 | Ardeola ... | Lisbon ... | Small-pox ... | New Ferry ... |
| Feb. 4 | Clan Mac Ewan | Capetown ... | Influenza ... | Brownlow Hill |

REMARKS.

His wife and three children were also infected by him, and were removed to the New Ferry Hospital. The ship was re-visited on the 30th January, also 31st, *re* the health of those on board. The vessel had sailed at the time of discovery of the nature of the sickness.

The patients, three Lascars, members of the crew, were removed from the vessel to the Port Hospital, New Ferry, and the vessel and bedding disinfected.

The patient, a Brazilian woman, was left in Hospital at Pernambuco on the homeward passage.

The patient (a soldier), from Canada, was removed to Hospital, and the vessel and bedding disinfected.

This vessel arrived on 3rd February, the Master reported all well on board to the Customs Boarding Officer, the Port Sanitary Inspector visited the vessel on the 4th February, when the Mate reported all well on board and no deaths or sickness during the voyage. On the evening of February 4th, a notification was received that the 2nd Engineer was suffering from Smallpox, and the case was removed to Hospital. He was taken ill on January 28th and was off duty for two days, but with the appearance of the eruption on the 31st he returned to his duties. The eruption was discrete and much modified. The vessel was visited on February 5th, and those of the crew working on board were examined and found free from Smallpox. Forty-five of the crew, two passengers, and two casual contacts, were vaccinated, and the vessel disinfected. The names and addresses of the passengers and crew were obtained, and information forwarded to the districts of destination, those living in the City being kept under daily observation. No further cases occurred.

This vessel arrived on the 16th January, and, on the 4th of February, 72 of the native crew were reported to be suffering from Influenza. 40 of the patients were removed to Brownlow Hill Hospital, leaving 32 sick patients for treatment on board; 20 of these, on becoming convalescent, were removed to the boarding-house, 74, Nelson Street. There were 37 deaths—23 occurring in Brownlow Hill Institution and 9 on board the ship.

| Date 1919. | Name of Vessel. | Where from. | Nature of Sickness. | Hospital to which Patient was removed. |
|---------------|-----------------|-------------------------|---------------------|--|
| Feb. 15 | Tactician ... | Galveston ... | Influenza ... | Sparrow Hall... |
| Feb. 17 | Adriatic ... | New York ... | Diphtheria ... | ... .. |
| Feb. 17 | Batanga ... | West Coast of Africa | Malaria ... | ... .. |
| Feb. 21 | Warri ... | West Coast of Africa | Malaria ... | ... .. |
| Feb. 22 | Isle of Mull... | Dakar ... | Malaria ... | ... .. |
| Feb. 24 | Benedict ... | West Coast of Africa | Malaria ... | ... .. |
| Feb 25 | Baltic ... | New York ... | Chicken-pox ... | ... .. |
| Feb. 26 | Saxonia ... | New York ... | Pneumonia... | Royal Southern |
| Feb. 27 | Carmania ... | New York ... | Diphtheria ... | Mill Lane ... |
| Feb. 27 | Carmania ... | New York ... | Enteric Fever | Royal Infirmary |
| Feb. 28 | Castalia | Bombay ... | Small-pox ... | New Ferry and Sparrow Hall |

REMARKS.

This vessel arrived from Galveston on the 6th February, all on board being reported well. On the 15th three or four of the crew were reported with colds, and on the 17th, 30 natives were reported to be suffering from Influenza. They were all removed to Hospital, and the vessel and bedding disinfected.

The patient, a steerage passenger, died, and was buried at sea on the 15th of February.

The patient (a Steward) was laid up on the home passage.

Sixteen of the crew suffered from Malaria during the home passage.

The chief Steward of this vessel, suffering from Malaria, was landed at Sierra Leone, on the home passage.

Two of the crew had suffered from Malaria during the voyage.

The patient, a second class passenger, was convalescent on arrival of ship, and proceeded home.

The patient (a steward) was removed to Hospital.

The patients, four second class passengers were removed to the City Hospital, and the vessel and bedding disinfected.

One of the crew, a fireman, suffering from Enteric Fever was removed to the Royal Infirmary, and the vessel and bedding disinfected.

This vessel arrived in Liverpool on the 28th of February, with passengers and 1164 troops, having left Bombay on the 27th of January. Troops were also taken on board at Aden and Malta. On arrival, the vessel was visited by Dr. Stallybrass, who found two of the troops to be suffering from Smallpox, viz., Driver C. A. K—, R.F.A., aged 24 years, and Private W. F—, R.A.M.C., aged 27 years.

| Date 1919. | Name of Vessel. | Where from. | Nature of Sickness. | Hospital to which Patient was removed. |
|---------------|----------------------------------|-------------------------|---------------------------|--|
| Feb. 28 | Castalia ... <i>continued</i> | Bombay ... | Small-pox ... | New Ferry and Sparrow Hall |
| Feb. 28 | Kursk ... | Salonica ... | Small-pox ... | New Ferry ... |
| Mar. 4 | Salaga ... | West Coast of Africa | Malaria ... | ... .. |
| Mar. 4 | Metagama .. | St. Johns ... | Pneumonia... (3 cases) | Fazakerley ... Balmoral Nurs- ing Home |
| Mar. 4 | City of Calcutta | Bombay ... | Dysentery ... | ... .. |
| Mar. 7 | Mokta ... | West Coast of Africa | Malaria ... (13 cases) | Belmont Road |
| Mar. 9 | Royal George | New York ... | Erysipelas ... | ... .. |

REMARKS.

C. A. K. became sick on the 28th January, and was isolated, and treated as a case of chickenpox. Fourteen days later, viz., 12th February, W. F., who was suffering from Influenza, had a rash, which was also looked upon as chickenpox. Both cases were removed to the Port Hospital, New Ferry, and 17 contacts (Military) were removed in charge of the Military Authorities to Sparrow Hall for observation. One hundred and thirty six of the crew were vaccinated, the name and addresses of the crew and passengers were obtained and forwarded to the districts of destination. The bedding and effects were removed, and the vessel was disinfected. The Embarkation Medical Officer (Military) was advised of the nature of the sickness. The vessel left for Glasgow on the 7th March, all well on board.

This vessel arrived at Southampton on the 28th February, with 1187 troops and passengers, who were landed there. She arrived in Liverpool on the 2nd March, and was boarded by the Port Sanitary Inspector, when the Chief Officer reported all well on board. On the 3rd March, the Fifth Engineer, aged 35 years, was removed to the Port Hospital, New Ferry, from his home in Bootle, suffering from Smallpox. He had been ill since the 16th February, the case having been looked upon as one of shingles. The vessel was visited, and the names and addresses of the crew (most of whom had left the vessel) were obtained, and forwarded to the respective sanitary authorities. Those still on board, numbering 34, were all vaccinated and kept under daily observation. The bedding and quarters were disinfected by the City and Port Staff. On the 17th March, the Second Engineer was removed from his home in Walton suffering from a very mild form of the disease.

Twelve of the crew suffered from Malaria during the voyage.

One of the patients, a Military passenger, was removed to Fazakerley Hospital, the others (also passengers) were removed to the Balmoral Nursing Home.

The patient, a passenger, proceeded to his home at Lanark.

The Chief Engineer was removed to the Belmont Institution. The others (all members of the crew) had suffered during the voyage. Vessel disinfected.

The patient, a saloon passenger, was removed to private apartments for nursing.

| Date 1919. | Name of Vessel. | Where from. | Nature of Sickness. | Hospital to which Patient was removed. |
|---------------|---------------------|------------------|-----------------------------|--|
| Mar. 12 | Karoa ... | Antwerp ... | Malaria and Dysentery | ... .. |
| Mar. 12 | City of Calcutta | Bombay ... | Chicken-pox | Sparrow Hall... |
| Mar. 14 | Heathside ... | Cuba ... | Malaria ... | Royal Southern |
| Mar. 17 | Chindwin .. | Rangoon ... | Malaria ... | ... .. |
| Mar. 17 | Bartolo ... | Valencia ... | Influenza ... | Nursing Home, Maryland St. |
| Mar. 17 | Wyreema ... | Outward bound | Influenza ... (12 cases) | Sparrow Hall... |
| Mar. 17 | Minnekahda | Outward bound | Influenza ... | Sparrow Hall... |
| Mar. 20 | Wyreema ... | Outward bound | Influenza .. (5 cases) | Sparrow Hall... |
| Mar. 23 | Caronia ... | New York ... | Pneumonia... (2 cases) | ... .. |
| Mar. 23 | Wyreema ... | Outward bound | Pneumonia... | ... .. |
| Mar. 23 | Bartolo ... | Valencia ... | Pneumonia... | Toxte:h Institution |
| Mar. 23 | Myrmidon ... | Java ... | Influenza ... (9 cases) | ... .. |

REMARKS.

The patient, a Lasear seaman, died at Antwerp.

The patients, the Ship's Surgeon and a Lasear, were removed to Sparrow Hall Hospital.

The patient, a fireman, was removed to the Royal Southern Hospital.

The patients, two passengers, proceeded to their homes.

All members of the crew, one of them, the chief engineer, was removed to the Nursing Home, Maryland Street. The vessel and bedding were disinfected.

The patients, members of the crew, were removed to Sparrow Hall. The vessel and bedding were disinfected.

Patient, quartermaster, was removed to Sparrow Hall Hospital. Bedding and quarters disinfected.

All members of the crew, and were removed to Sparrow Hall Hospital.

Two cases occurred during the voyage.

The patient, the boatswain, was removed to a private nursing home.

The patient, a fireman, was removed to the Toxteth Institution Hospital.

Nine of the crew suffered from the disease during the voyage.

| Date 1919. | Name of Vessel. | Where from. | Nature of Sickness. | Hospital to which Patient was removed. |
|---------------|-----------------------|-------------------------|----------------------------|--|
| Mar. 24 | Chama... .. | West Coast of Africa | Malaria ... .. | ... .. |
| Mar. 24 | Lapland | New York ... | Influenza ... | Nursing Home Birkenhead ... |
| Mar. 25 | Montenegro... | Las Palmas | Malaria ... (2 cases) | ... .. |
| Mar. 25 | War Nootka | Vancouver ... | Influenza ... (4 cases) | Walton Institution |
| Mar. 26 | Wyreema ... | Outward bound | Influenza ... (8 cases) | Sparrow Hall... |
| Mar. 26 | Elmina | West Coast of Africa | Malaria ... (4 cases) | ... .. |
| Mar. 27 | City of Marseilles | Bombay ... | Malaria ... (6 cases) | ... .. |
| Mar. 30 | City of Calcutta | Outward bound | Measles ... | Grafton Street |
| Mar. 30 | Queen Elizabeth | In the River | Chicken-pox | Sparrow Hall... |
| Mar. 31 | Wayfarer ... | New Orleans | Pneumonia... | Toxteth Institution |
| Mar. 31 | Flaxman | West Coast of Africa | Malaria ... (5 cases) | ... .. |
| April 1 | Adriatic | New York ... | Influenza ... (3 cases) | ... .. |
| April 2 | Karoa | Antwerp ... | Dysentery ... | ... .. |

REMARKS.

Two of the crew suffered from Malaria during the voyage.

One of the patients, a passenger, was removed to a nursing home in Birkenhead.

Two of the crew, the master and a boy. The former proceeded to his home, the boy was removed to Hospital.

Members of the crew. All removed to Walton Institution Hospital.

All members of the crew. Removed to Sparrow Hall Hospital.

Two passengers and two of the crew suffered from Malaria during the voyage.

Four passengers and two of the crew suffered from Malaria during the voyage.

Patient removed to the City Hospital, Grafton Street.

The patient, a seaman, was removed to Sparrow Hall.

Patient, a fireman, removed to Toxteth Institution Hospital.

One of the patients landed at Lagos, the others, on arrival, proceeded to their homes.

Two passengers died on the home passage, the other patient proceeded to his home at Hooton. Vessel and bedding disinfected.

The patient, an engineer, proceeded to his home at Aigburth.

| Date 1919. | Name of Vessel. | Where from. | Nature of Sickness. | Hospital to which patient was removed | | |
|---------------|-----------------|-------------------------|---------------------------|---|-----|-----|
| April 10 | Mendorino ... | New York ... | Enteric Fever | ... | ... | ... |
| April 10 | Gladiator ... | New Orleans | Influenza .. (2 cases) | ... | ... | .. |
| April 10 | Patani ... | West Coast of Africa | Malaria ... (9 cases) | ... | ... | ... |
| April 11 | Prahsu ... | West Coast of Africa | Malaria ... | ... | ... | ... |
| April 12 | Aquitania ... | New York ... | Measles ... | Fazakerley | ... | |
| April 13 | Cretic ... | New York ... | Diphtheria ... | ... | ... | ... |
| April 15 | Mandingo ... | West Coast of Africa | Malaria ... | Southern | ... | |
| April 15 | Portrushton | West Coast of Africa | Malaria ... (2 cases) | ... | ... | ... |
| April 17 | Orduna ... | New York ... | Measles ... | ... | ... | ... |
| April 20 | Regina ... | Boston ... | Scarlatina ... | Fazakerley | ... | |
| April 22 | Egori ... | West Coast of Africa | Malaria ... (6 cases) | ... | ... | ... |
| April 23 | Ringhorn ... | Bathurst ... | Malaria ... | Brownlow Hill | | |

REMARKS.

The patient, a passenger, was removed to private nursing apartments in the City, and the vessel and bedding disinfected.

An engineer and the third officer suffered from Influenza on the outward passage to New Orleans.

The patients, all members of the crew, proceeded to their homes.

The patient, a trader, proceeded to his home in the city.

The patient, a steward, was removed to the City Hospital, Fazakerley, and the vessel and bedding disinfected,

The patient, a Canadian soldier, was landed at Halifax, where disinfection was carried out.

One of the crew, a seaman, suffering from Malaria, was admitted to the Royal Southern Hospital.

The patients, two of the crew, suffered from Malaria during the home passage.

The patient, being convalescent, on arrival proceeded to his home.

The patient, a seaman, was removed to the City Hospital, Fazakerley, and the vessel and bedding disinfected.

Six of the crew had suffered during the voyage.

One of the stewards having Influenza was removed to the Brownlow Hill Hospital.

| Date 1919. | Name of Vessel. | Where from. | Nature of Sickness. | Hospital to which patient was removed. | | |
|---------------|-------------------|---------------------------|--------------------------|--|-----|-----|
| April 23 | Onitsha ... | West Coast of Africa | Malaria ... (5 cases) | ... | ... | ... |
| April 24 | Lime Branch | West Coast S. American | — | ... | ... | ... |
| April 29 | City of Durham | Colombo ... | Small-pox ... | ... | ... | ... |
| April 29 | City of Sparta | Bombay ... | Plague ... | ... | ... | ... |
| April 29 | Maungarie ... | Alexandria ... | German Measles | ... | ... | ... |
| May 1 | Aeneas ... | Bombay ... | Small-pox ... | ... | ... | ... |

REMARKS.

The cases occurred amongst the passengers and crew during the voyage.

This vessel arrived from the West Coast of South America, and on opening up the holds for the discharge of cargo, on the 24th of April, dead rats were found. The usual precautions against the egress of rats were at once taken, and on the completion of the discharge of cargo, the holds were fumigated, and 92 rats killed thereby. Some 61 rats were also trapped by the Authority's rat catchers. None of these were found infected with Plague.

A native fireman, suffering from Smallpox, was landed at Perim, where disinfection of the vessel was carried out.

The holds of this vessel were fumigated by the Clayton apparatus whilst at Bombay, on the 16th March. One hundred and seventy five dead rats were found on opening out on the 26th March. Asadoorali, a native fireman, aged 25, was taken ill. He was removed to hospital ashore and died of Plague on the 28th March. Whereupon the infected quarters and the holds were again fumigated, but no further dead rats were found. The vessel left Bombay on the 3rd April, and on the 19th a soldier of the Royal West Kents, aged 33 years, was taken ill; he developed a left axillary bubo, and died on the 21st April. A post-mortem made showed the presence of *B. Pestis* in the affected gland. The vessel arrived in Liverpool at 6 p.m. on the 29th April, and was visited by the Assistant Medical Officers. On obtaining the above history, a certificate was given to the master that the vessel was a suspected ship, by reason of Plague, and she was detained in the quarantine ground. There were no civilian passengers. The crew consisted of 101 natives and 21 Europeans. The troops, numbering 1,262, were inspected and disembarked, proceeding to Knotty Ash Camp to be disinfected prior to demobilisation. Two native members of the crew with ill-defined febrile symptoms were removed to the Port Hospital by ship's boat, viz., Aboo Moosa and Noor Mahomed Bhandary. Sputum from Noor Mahomed was forwarded to the City Bacteriologist, who reported on the 2nd May that *Pneumococci*, and also some pestiform organisms, had been found in it. He died on May 4th, a post-mortem examination showing the cause of death being Septic-peritonitis. On the 12th May, the Assistant Port Medical Officer found another native, a fireman, with feverish symptoms, and this man was immediately removed to the Port Hospital. He died on 17th May, the cause of death being Plague.

The patient, a steward, was landed on the home passage at Southampton.

The patient, a soldier, was landed at Suez on the home passage.

| Date 1919. | Name of Vessel. | Where from. | Nature of Sickness. | Hospital to which patient was removed. |
|------------|-----------------|-------------------------|----------------------------|--|
| May 1 | Aeneas ... | Bombay ... | Pneumonia... (2 cases) | ... .. |
| May 6 | Romney ... | Rio de Janeiro | Enteric Fever (4 cases) | Northern Hospital |
| May 7 | Auldmuir ... | Bathurst ... | Malaria ... | ... .. |
| May 8 | Olympia ... | Bombay ... | Small-pox ... | ... .. |
| May 10 | Demerara ... | Rio de Janeiro | Enteric Fever | Fazakerley ... |
| May 10 | Demerara .. | Rio de Janeiro | Influenza ... | ... .. |
| May 12 | Batanga .. | West Coast of Africa | Malaria ... (2 cases) | ... .. |
| May 12 | Palma ... | West Coast of Africa | Malaria ... (6 cases) | ... .. |
| May 12 | Nestor .. | Bombay ... | Malaria ... (13 cases) | Mill Road and Belmont Road |
| May 13 | Nestor ... | Bombay ... | Dysentery ... (4 cases) | ... .. |
| May 13 | City of Sparta | Bombay ... | Dysentery ... | New Ferry ... |
| May 13 | Abinsi ... | West Coast of Africa | Malaria ... (7 cases) | ... .. |
| May 13 | Thistlemoor | Baltimore ... | Chicken-pox | ... .. |

REMARKS.

One case removed to Nursing Home, Balmoral Road, and the other case to Nursing Home, Bedford Street.

One of the patients, the chief officer, was removed to the Northern Hospital; another, the Marconi operator, proceeded to his home. Two other members of the crew were left at Montevideo. Bedding and quarters of vessel disinfected.

The patient proceeded to his home in Barry.

The patient, a Lascar, was left in Hospital at Suez. Bedding destroyed and forecandle fumigated at Suez.

The patient, a deck boy, was removed to the City Hospital, Fazakerley.

The patient died at sea on the passage home.

Two of the crew suffered from Malaria during the voyage.

The patients, members of the crew, suffered during the voyage.

The patients were removed to hospital, viz., 10 to Mill Road Institution, and 3 to Belmont Road Institution.

The cases all occurred among the troops.

The patient, one of the native crew, was removed to the Port Hospital.

Four passengers and three of the crew suffered during the voyage.

The patient, the Marconi operator, suffered on the voyage home.

| Date 1919. | Name of Vessel. | Where from. | Nature of Sickness. | Hospital to which patient was removed. |
|------------|-----------------|----------------------|---------------------|--|
| May 15 | Prah ... | West Coast of Africa | Malaria ... | ... .. |
| May 15 | Dalrazaan ... | Alexandria ... | Typhus Fever | Netherfield Road |
| May 21 | Governor ... | Rangoon ... | Malaria ... | ... .. |
| May 22 | Raeburn ... | St. Vincent... | Typhoid Fever | ... .. |
| May 22 | Media ... | Alexandria ... | Enteric Fever | Northern Hospital |
| May 22 | Media ... | Alexandria ... | Chicken-pox | ... .. |
| May 22 | Larne ... | Lisbon ... | Malaria (2 cases) | ... .. |
| May 25 | Baltic ... | New York ... | Measles ... | ... .. |
| May 25 | Media ... | Alexandria ... | Chicken-pox | Brownlow Hill |
| May 27 | Metagama ... | Montreal ... | Scarlatina ... | ... .. |
| May 27 | Iveagh ... | Dublin ... | Measles .. | Brownlow Hill |
| May 29 | Holbein ... | Bahia ... | Smallpox ... | ... .. |

REMARKS.

Four of the crew suffered during the voyage.

The patient, a steward, was removed to the City Hospital, North.

The patient, the master of the vessel, was left in hospital in Colombo.

A seaman, suffering from Typhoid, was landed at St. Vincent.

The patient, one of the crew, was removed to the Northern Hospital.

A native fireman, suffering from Chickenpox, was removed to Hospital.

Two of the crew suffered during the home voyage.

The patient, convalescent on arrival, proceeded to his home in Brussels.

A native seaman removed to Brownlow Hill Hospital.

The patient, one of the crew, had been removed to hospital at Tyne-mouth.

The patient, a seaman, was removed to Brownlow Hill Hospital. Vessel and bedding disinfected.

The patient, a child passenger, was landed at Oporto on the home passage.

| Date, 1919. | Name of Vessel. | Where from. | Nature of Sickness. | Hospital to which Patient was removed. |
|----------------|---------------------|-------------------------|---------------------------|--|
| May 29 | Royal George | New York ... | Chicken-pox | Fazakerley ... |
| May 30 | Socrates ... | Buenos Ayres | Enteric Fever | ... .. |
| May 30 | Egwanga ... | West Coast of Africa | Malaria ... (8 cases) | Royal Southern |
| June 2 | Media ... | Alexandria ... | Chicken-pox | Fazakerley ... |
| June 2 | Orduna ... | New York ... | Diphtheria .. | ... .. |
| June 2 | Rabymere ... | West Coast of Africa | Malaria ... (11 cases) | ... .. |
| June 4 | Scandinavian | Montreal ... | Measles ... (2 cases) | Walton Institution |
| June 5 | Warri ... | West Coast of Africa | Malaria ... (6 cases) | ... .. |
| June 6 | Limmere .. | West Coast of Africa | Malaria ... (8 cases) | ... .. |
| June 9 | Mandingo ... | West Coast of Africa | Malaria ... (4 cases) | ... .. |
| June 9 | Amatonga ... | Rangoon ... | Small-pox ... | ... .. |
| June 10 | City of Calcutta | Bombay ... | Malaria ... | Mill Road ... |
| June 11 | Egba ... | West Coast of Africa | Malaria ... | ... .. |

REMARKS.

The patient, a saloon passenger, was removed to the City Hospital, Fazakerley.

The patient, a cook, was landed at Buenos Ayres on the home passage.

Eight of the crew suffered during the voyage home. On arrival one of these was removed to the Royal Southern Hospital.

One of the native crew, a coal trimmer, was removed to the City Hospital, Fazakerley.

A steerage passenger who proceeded to his home in Dublin.

The third engineer was ill on arrival, and after being seen by Dr. Wright, proceeded to his home in Wallasey. Ten other members of the crew suffered during the voyage.

One of these proceeded to his home in Heswall. The other being removed to Walton Institution. Vessel and bedding disinfected.

The patients, all members of the crew, suffered during the voyage.

Eight of the crew suffered from Malaria during the voyage.

Four of the crew suffered during the voyage.

A native seaman, suffering from Smallpox, was landed at Rangoon

A soldier removed to Mill Road Institution.

The patient, a passenger, died at Calabar.

| Date 1910. | Name of Vessel. | Where from. | Nature of Sickness. | Hospital to which Patient was removed. |
|---------------|-----------------------------|-------------------------|------------------------------|--|
| June 11 | Doonholm ... | West Coast of Africa | Malaria ... (4 cases) | ... .. |
| June 14 | Conway Training Ship ... | In River ... | Scarlatina ... (4 cases) | City Hospitals |
| June 16 | Megantic ... | Montreal ... | Scarlatina ... | Fazakerley ... |
| June 18 | Conway Training Ship ... | In River ... | Scarlatina ... (14 cases) | Fazakerley ... |
| June 18 | Bendu ... | West Coast of Africa | Malaria ... (9 cases) | ... .. |
| June 19 | Salaga ... | West Coast of Africa | Malaria ... (3 cases) | ... .. |
| June 21 | Edenton ... | Galveston ... | Diphtheria .. | ... .. |
| June 24 | Scindia ... | Bombay ... | Scarlatina ... | ... .. |
| June 24 | Champion ... | in the Port ... | Smallpox ... | New Ferry ... |
| June 25 | Anselm ... | Manaos ... | Smallpox ... (3 cases) | ... .. |
| June 25 | Eaglet ... | in Dock ... | Diphtheria . | Fazakerley ... |
| June 26 | Darro ... | Buenos Ayres | Smallpox ... | ... .. |

REMARKS.

Four members of the crew suffered during the voyage

Four cadets on this vessel were reported as having Scarlatina, three of whom were brought ashore and removed to City Hospitals.

The patient, a saloon passenger, was removed to City Hospital, Fazakerley. Vessel and bedding were disinfected.

Fourteen cadets on board the training ship "Conway," suffering from Scarlatina were brought ashore and removed to the City Hospital, Fazakerley.

One member of the crew, suffering from Malaria, was landed at Secondee, the other eight suffered during the voyage.

The patients, all members of the crew, suffered during the voyage.

The patient, one of the crew, was removed to hospital, and the vessel and bedding disinfected.

The patient, a saloon passenger, was allowed to proceed to her home in Manchester by taxi. The taxi was disinfected, also the vessel and bedding.

The patient, the mate of this steam flat, was removed from his home, in the City, to the Port Hospital, New Ferry. The vessel and bedding were disinfected.

Three passengers, who boarded this vessel on the outward trip, were removed to hospital on arrival at Para, suffering from Smallpox, The remainder of the passengers and the crew were re-vaccinated by the Medical Officer of Health at Para.

Patient removed to the City Hospital, Fazakerley.

The patient, a second saloon passenger, was landed at Isea Grande, where disinfection and vaccination was carried out.

| Date, 1919. | Name of Vessel. | Where from. | Nature of Sickness. | Hospital to which Patient was removed. |
|----------------|-----------------|-------------------------|--------------------------|--|
| July 1 | Ernemore ... | Alexandria ... | Smallpox ... | New Ferry ... |
| July 1 | Matina ... | Alexandria ... | Smallpox ... | ... .. |
| July 5 | Aguila ... | Canaries ... | Enteric Fever | Northern Hospital |
| July 6 | Abinsi ... | West Coast of Africa | Dysentery ... | Royal Southern |
| July 6 | Abinsi ... | West Coast of Africa | Malaria .. (23 cases) | ... . |
| July 9 | Conway ... | in River ... | Scarlatina .. | Fazakerley ... |
| July 15 | Minnedosa ... | Montreal ... | Chicken-pox | ... .. |
| July 15 | Minnedosa ... | Montreal ... | Measles ... | Fazakerley ... |

REMARKS

On the 1st July, this vessel arrived in the Port of Liverpool, bound for Manchester, having left Alexandria, an infected port, on the 17th June. She was at once visited by Dr. Wright, in accordance with usual procedure, who found the third engineer to be suffering from Smallpox. The patient had no doubt contracted the disease in Alexandria on June 11th. He was taken ill on the 23rd June, and the rash made its appearance on the 26th. He was attended to by the master, who was treating him for sweat rash. The patient was landed at the Port Hospital in the ship's boat, and all his bedding and clothing were landed at the same time for disinfection. The patient's cabin, and other parts of the ship which had been exposed to infection, and the ship's boat were disinfected by the Port Sanitary Inspectors. There were six passengers on board and 43 of the crew, in addition to the patient. These were all vaccinated by Drs. Wright and Stallybrass, with the exception of one member of the crew. The passengers were all vaccinated, with the exception of an infant who had been done recently. The vessel was allowed to proceed to Manchester, no delay having been occasioned by these proceedings, the Medical Officer of Health of Manchester being duly notified.

The patient, a scullery boy, was landed at Alexandria, where disinfection was carried out. All were well on board on the arrival of vessel in this port.

A Russian sailor, one of the crew, who was suffering from Enteric Fever, was removed from the vessel at the stage to the Northern Hospital.

The patient, a passenger, was removed to the Southern Hospital.

Twelve passengers and eleven of the crew suffered during the voyage.

The patient was brought ashore and removed to the City Hospital, Fazakerley.

The patient, a child, proceeded to his home in the City.

The patient, a child passenger, was removed to the City Hospital, Fazakerley. Vessel and bedding disinfected.

| Date 1919. | Name of Vessel. | Where from. | Nature of Sickness. | Hospital to which Patient was removed. |
|---------------|-----------------|-------------------------|--------------------------|--|
| July 21 | Baltic ... | New York ... | Measles ... (2 cases) | Walton Institution |
| July 23 | Deseado ... | Buenos Ayres | Pneumonia ... | ... .. |
| July 23 | Cornucopia ... | Boston ... | Pneumonia ... | ... .. |
| July 24 | Accra ... | West Coast of Africa | Malaria ... | Southern ... |
| July 26 | Lake Fresco | Montreal ... | Enteric Fever | Northern Hospital |
| July 28 | Northland ... | New York ... | Enteric Fever | ... .. |
| July 29 | Montenegro... | West Coast of Africa | Malaria ... | Royal Infirmary |
| July 31 | Celtic ... | New York ... | Enteric Fever | Northern Hospital |
| July 31 | War Beach ... | West Coast of Africa | Malaria ... (5 cases) | Royal Infirmary and Northern |
| Aug. 1 | Melita ... | Montreal ... | Scarlatina ... | ... .. |
| Aug. 2 | Manzanares | Canaries ... | Scarlatina ... | Fazakerley ... |
| Aug. 4 | Kerry ... | Dublin ... | Scarlatina ... | ... .. |

REMARKS.

The patients, two third class passengers, were removed to the Walton Institution.

The patient died, and was buried at sea.

The patient, a coal trimmer, died on the home passage, and was buried at sea.

The patient, one of the crew, was removed to the Southern Hospital.

One of the stewards, suffering from Enteric Fever, was removed to the Northern Hospital. Vessel and bedding were disinfected.

The patient, a steward, proceeded to his home in the City. Vessel and bedding were disinfected.

The patient was removed to hospital.

A second class passenger, who was suffering from Enteric Fever, was removed to the Northern Hospital, and the vessel and bedding disinfected.

The patients were all removed to hospital.

One of the crew, a deckboy, who had gone to his home in the City, was reported to be suffering from Searlatina.

The patient, who had gone to his home in the City, was removed to the City Hospital, Fazakerley.

A passenger on this vessel, from Dublin, on arrival at his home in the City, was reported to be suffering from Searlatina.

| Date 1919. | Name of Vessel. | Where from. | Nature of Sickness | Hospital to which Patient was removed. |
|---------------|-----------------|-------------------------|--------------------------|--|
| Aug. 4 | Appam ... | West Coast of Africa | Malaria ... (3 cases) | ... .. |
| Aug. 6 | Bosnian ... | Constantinople | Pneumonia... | ... .. |
| Aug. 6 | Pendarves ... | West Coast of Africa | Malaria ... (6 cases) | Royal Infirmary and Fazakerley |
| Aug. 8 | Tudor Prince | Alexandria ... | Small-pox ... | ... .. |
| Aug. 11 | Alexandrian | New Orleans | Enteric Fever (?) | ... .. |
| Aug. 12 | War Beach .. | West Coast of Africa | Malaria ... (6 cases) | Royal Infirmary |
| Aug. 13 | Western Light | Savannah ... | Enteric Fever (?) | Northern ... |
| Aug. 13 | War Norman | West Coast of Africa | Malaria | Fazakerley ... |
| Aug. 15 | Andalusian ... | Alexandria ... | Enteric Fever | Netherfield Road |
| Aug. 18 | Lake Frohna | Montreal ... | Enteric Fever | Netherfield Road |
| Aug. 20 | Ortega ... | Taleamano ... | Chicken-pox | ... .. |
| Aug. 20 | Huallago ... | South America | Enteric Fever | Birkenhead ... |

REMARKS

The patients being convalescent, proceeded to their homes.

The chief steward on this vessel, suffering from Pneumonia, was landed at Gibraltar on the home passage.

The patients, all members of the crew, were removed to hospital.

The patient, one of the crew, who joined the vessel at Alexandria, where he had been in hospital suffering from Smallpox.

On arrival in this port, the patient, the storekeeper, who was convalescent, proceeded to his home. Disinfection of the vessel and bedding carried out. The sickness proved to be non-infectious.

Members of the crew who were all removed to hospital.

The patient was removed to the Northern Hospital, and the vessel and bedding disinfected. The sickness proved to be non-infectious.

Two of the crew who were removed to hospital.

The patient, second engineer, was removed to the City Hospital North, and the vessel and bedding disinfected.

The patient was removed to Hospital, and the vessel and bedding disinfected.

...

The sickness occurred on the outward passage.

The patient was admitted to the Birkenhead Infectious Diseases Hospital, and disinfection of the vessel and bedding carried out.

| Date 1919. | Name of Vessel. | Where from. | Nature of Sickness | Hospital to which Patient was removed. |
|------------|-----------------|---------------|----------------------------|--|
| Aug. 21 | Minnedosa ... | Montreal ... | Pneumonia... | Southern ... |
| Aug. 21 | Musketo ... | Philidelphia | Malaria ... | ... .. |
| Aug. 25 | Kisuchoguellas | Brunswick ... | Enteric Fever | ... .. |
| Aug. 26 | Henzada ... | Rangoon ... | Enteric Fever (2 cases) | Netherfield Road |
| Aug. 26 | Orduna ... | New York ... | Small-pox ?... | New Ferry ... |
| Aug. 28 | Wimborne ... | Rangoon ... | Dysentery ... | ... .. |
| Aug. 30 | Discoverer ... | Calcutta ... | Malaria ... | Fazakerley ... |
| Aug. 30 | Discoverer ... | Calcutta ... | Enteric Fever (?) | Netherfield Road |
| Aug. 30 | Rimouski ... | Montreal ... | Enteric Fever | Netherfield Road |
| Sept. 2 | Eclipse ... | Para ... | Enteric Fever | Netherfield Road |
| Sept. 2 | Clan Lamont | India ,... | Plague . | ... .. |

REMARKS

The patient, a third class passenger, was admitted to the Royal Southern Hospital.

The patient, one of the crew, was treated on board.

The captain of this vessel, who was suffering from Enteric Fever, was landed at St. George.

The patients, two passengers, were removed to the City Hospital North, and the vessel and bedding disinfected.

This vessel arrived in the Port, from New York, on the 26th August, and reported a case of Smallpox. The patient, the lift-boy, was removed from the vessel in the river, in the ship's boat, to the Port Hospital. Vaccination of the crew and disinfection of the vessel was immediately carried out, and a list of the names and addresses of all on board obtained; these were forwarded to the authorities at the places of destination, the crew being kept under daily observation. The sickness subsequently proved to be non-infectious.

The patient, the wireless operator, suffered from Dysentery during the home passage.

One of the native crew who was removed to hospital.

The patient, one of the crew, was removed to hospital, and the vessel and bedding disinfected. The sickness proved to be non-infectious.

The patient, a seaman, was removed to hospital, and the vessel and bedding disinfected.

The Patient was removed to the City Hospital North, and the vessel and bedding disinfected.

This vessel arrived in the Port of London, and landed a case of Plague, on the 19th of August. The usual disinfection and fumigation for the destruction of rats was carried out, and the vessel sailed for Liverpool, arriving on the 1st September. The vessel was medically inspected on arrival, and all were found well. Close search was made for rats, and eleven were caught during her stay in this port and sent to the City Bacteriologist. No further cases of Plague were reported, and all rats caught on the vessel showed no evidence of Plague infection.

| Date 1919. | Name of Vessel. | Where from. | Nature of Sickness | Hospital to which Patient was removed. |
|---------------|-----------------|-------------------------|---------------------------------|--|
| Sept. 2 | Inishboffin ... | Hamburg ... | Malaria ... | Southern ... |
| Sept. 3 | Hildebrand ... | Manaos and Para | Small-pox ... | New Ferry ... |
| Sept. 3 | Eaglet ... | in Dock ... | Searlatina ... | Fazakerley ... |
| Sept. 4 | Raithwaite ... | West Coast of Africa | Malaria ... (2 cases) | ... .. |
| Sept. 7 | Melita ... | Montreal ... | Measles ... | Fazakerley ... |
| Sept. 8 | Eaglet ... | — | Cerebro Spinal Meningitis | Royal Southern |
| Sept. 9 | Martaban ... | Colombo ... | Chicken-pox | New Ferry ... |
| Sept. 9 | Amatonga ... | Alexandria ... | Malaria ... | Royal Infirmary |
| Sept. 10 | Brodcliffe ... | Colombo ... | Pneumonia... | ... .. |
| Sept. 11 | Eaglet ... | in Dock ... | Diphtheria ... | Mill Lane ... |
| Sept. 12 | West-Imboden | Galveston ... | Diphtheria ... | Fazakerley .. |

REMARKS.

Removed to the Southern Hospital.

This vessel arrived in Liverpool from Manaos, Para, &c., on the 3rd September, having a case of Smallpox on board. The patient, an engineer, was vaccinated in infancy. His rash appeared on the 19th of August, and he was isolated in the ship's hospital forthwith. Two cases of Smallpox had occurred on the outward voyage amongst third class passengers, both of which were landed at Para on the 2nd and 5th of August respectively. No doubt the patient contracted the infection from these passengers. The vessel had on board 172 passengers and 158 crew. They were all vaccinated with the exception of twenty-nine. The patient was removed, in the ship's boat, to the Port Hospital, together with the bedding and clothing, the isolation hospital being disinfected.

The patient was removed to hospital and disinfection carried out.

Convalescent on arrival and proceeded.

The patient, a cadet, was removed to the City Hospital, Fazakerley, and the bedding and vessel disinfected.

The patient, a naval seaman, was admitted to the Royal Southern Hospital.

One of the crew, a greaser, was removed to the Port Hospital, New Ferry.

Patients removed to the Royal Infirmary.

The patient, a seaman, died off the Port, and the body was brought ashore for interment.

The patient, a seaman, was removed to the City Hospital, East.

The patient, one of the crew, was removed to hospital, and the vessel and bedding disinfected.

| Date 1919. | Name of Vessel. | Where from. | Nature of Sickness | Hospital to which Patient was removed. |
|---------------|-----------------|-------------------------|---------------------------|--|
| Sept. 14 | Warwickshire | Colombo ... | Enteric Fever | Netherfield Road |
| Sept. 16 | Matador ... | Galveston ... | Malaria .. | ... .. |
| Sept. 17 | Prah ... | West Coast of Africa | Malaria .. (8 cases) | ... .. |
| Sept. 18 | Wanby ... | Colombo .. | Malaria ... (2 cases) | ... .. |
| Sept. 18 | Darro ... | Vigo ... | Measles ... (2 cases) | ... .. |
| Sept. 18 | Darro .. | Vigo ... | Chicken-pox | ... .. |
| Sept. 18 | Darro ... | Vigo ... | Pneumonia... | ... .. |
| Sept. 23 | Elmina ... | West Coast of Africa | Malaria ... (16 cases) | ... .. |
| Sept. 25 | Aquitania ... | New York ... | Enteric Fever | Netherfield Road |
| Sept. 27 | Digby ... | Halifax ... | Measles ... (2 cases) | Walton Institution |
| Oct. 1 | Molesy ... | Newcastle N.B. | Small-pox ... | ... .. |
| Oct. 4 | Czar ... | Russia ... | Enteric Fever | Netherfield Road |
| Oct. 5 | Victoria ... | Valparaiso ... | Enteric Fever | Netherfield Road |

REMARKS.

The patient, the second cook, was removed to the City Hospital, Netherfield Road, and the vessel and bedding disinfected.

The case was landed at Norfolk, Va. Patient was a fireman on vessel.

Eight of the crew had suffered during the voyage, but had recovered on arrival in this Port.

Two of the crew suffered during the voyage.

The patients, second class passengers, were landed at Vigo.

A steerage passenger, who was landed at Lisbon.

The patient died, and was buried at sea.

Sixteen of the crew suffered during the voyage, but were reported all well on arrival.

The patient, a trimmer, was removed to Hospital, and the vessel and bedding disinfected.

Both the cases were second class passengers, and were removed to Hospital. The vessel and bedding were disinfected.

The patient, an apprentice, was left in hospital at Newcastle.

The patient, a seaman, was removed to Hospital, and the vessel and bedding disinfected.

A deck boy, suffering from Enteric Fever, was removed to Hospital. The vessel and bedding were disinfected.

| Date 1919. | Name of Vessel. | Where from. | Nature of Sickness | Hospital to which Patient was removed. |
|---------------|-----------------|-------------------------|----------------------------------|--|
| Oct. 9 | Laertes ... | China ... | Cerebro- Spinal Meningitis | Birkenhead Borough |
| Oct. 9 | Monarch ... | West Coast of Africa | Malaria .. (5 cases) | ... .. |
| Oct. 9 | Aenaeas ... | Singapore ... | Cerebro- Spinal Meningitis | ... .. |
| Oct. 9 | Anselm ... | Para ... | Malaria ... | ... .. |
| Oct. 9 | Atreus ... | China ... | Tuberculosis | ... .. |
| Oct. 9 | Musician ... | Pernambuco | Plague ... | ... .. |
| Oct. 9 | Mandalay ... | Rangoon ... | — | ... .. |

REMARKS

The patient was admitted to Birkenhead Borough Hospital.

Five of the crew suffered during the voyage.

The patient died, and was buried at sea.

One of the crew, suffering from Malaria, on arrival in this Port proceeded to his home.

Six cases occurred amongst the Chinese Labour Corps on the outward voyage.

This vessel arrived in the Port on the 22nd September, from Pernambuco, Maceio, Cabadello and Las Palmas; she was visited in due course by the Authority's rat-catcher, who found six dead rats in the lazarette. These were forwarded to the City Bacteriologist, who reported that the animals had died from Plague. Measures were immediately instituted to prevent the egress of rats from the ship to the shore, and as the cargo was discharged it was searched for rats. The ship was thoroughly searched before, during, and after discharge of cargo, and disinfection undertaken locally whenever dead rats were found. Matchboard lining to the food stores, and flooring boards, affording harbourage for rats was torn up and burnt. Names and addresses of the crew, etc., were obtained and enquiries made daily as to their health. None of these contracted the disease. Workers in the ship were protected against fleas by gloves, leggings and suitable overalls. Rat catchers were continuously at work in the ship and on the quays. Dead rats to the number of 182 were found in the ship before fumigation, and 25 after fumigation, and 13 live rats were trapped on board.

This vessel arrived in the Port on the 29th September, from Rangoon, Colombo, Port Said and Algiers, the two former being Plague infected ports. She was dealt with on arrival by the Assistant Medical Officer, and reported all well. Four rats were caught in traps, and were forwarded to the City Bacteriologist, who reported that one of these was suspicious of Plague; he subsequently reported that the organism was probably not *B. pestis*. The usual precautions were adopted.

| Date 1919. | Name of Vessel. | Where from. | Nature of Sickness | Hospital to which Patient was removed. |
|---------------|-----------------|-------------------------|----------------------------|--|
| Oct. 12 | Deseado ... | Buenos Ayres | Small-pox ... | ... .. |
| Oct. 15 | Albano ... | Almeria ... | Malaria ... | Royal Infirmary |
| Oct. 16 | Ingleby .. | Colombo ... | Malaria (5 cases) | ... .. |
| Oct. 16 | Mandalay ... | Rangoon ... | Enteric Fever (?) | Netherfield Road |
| Oct. 17 | Baltic ... | New York ... | Diphtheria ... | ... .. |
| Oct. 20 | Biafra ... | West Coast of Africa | Malaria (8 cases) | ... .. |
| Oct. 23 | Carmania ... | New York ... | Enteric Fever | Brownlow Hill Institution |
| Oct' 21 | Circassia ... | Bombay ... | Malaria ... | ... .. |
| Oct. 24 | Rabymere ... | West Coast of Africa | Malaria (6 cases) | ... .. |
| Oct. 30 | Salaga . | West Coast of Africa | Malaria (22 cases) | ... .. |
| Oct. 30 | Salaga ... | West Coast of Africa | Small-pox ... | ... .. |
| Oct. 30 | Clan McKinlay | Calcutta ... | Enteric Fever (2 cases) | ... .. |
| Oct. 31 | War-Charger | Bombay .. | Chicken-pox | ... .. |

REMARKS.

A third class passenger, suffering from Smallpox, was landed at Rio Janeiro, where disinfection of the vessel was carried out.

The patient, one of the crew, a seaman, was removed to the Royal Infirmary.

The cases occurred during the voyage, all being well on arrival in this Port.

The patient was removed to the City Hospital, Netherfield Road, and vessel and bedding disinfected. The sickness proved to be non-infectious.

The patient, a third class passenger, died prior to arrival in this Port, and was buried at sea.

The cases occurred during the voyage, and all had recovered on arrival here

The patient, a trimmer, was admitted to the Brownlow Hill Hospital the vessel and bedding being disinfected.

One of the crew, who had suffered during the voyage.

The patients were all members of the crew, who had suffered during the voyage.

All of these members of the crew suffered during the voyage.

A native passenger, having Smallpox was landed at Lagos on the 4th October, where vaccination and disinfection of the vessel was carried out by the Port Medical Officer.

Both cases occurred abroad, and were landed at Galli and Port Said, where disinfection was carried out.

One of the crew, a Chinaman, had Chickenpox during the voyage.

| Date 1912. | Name of Vessel. | Where from. | Nature of Sickness | Hospital to which Patient was removed. |
|---------------|----------------------|-------------------------|----------------------------|--|
| Oct. 31 | War-Charger | Bombay ... | Malaria ... (2 cases) | ... .. |
| Nov. 4 | Ingleby ... | Colombo ... | Measles ... | Fazakerley ... |
| Nov. 5 | Scandinavian | Montreal ... | Measles ... | Walton Institute |
| Nov. 5 | Scandinavian | Montreal ... | Phthisis ... | ... .. |
| Nov. 6 | Gloucester- shire | Rangoon ... | Chicken-pox (2 cases) | New Ferry ... |
| Nov. 6 | Gloucester- shire | Rangoon ... | Plague (?) ... | New Ferry ... |
| Nov. 6 | Hildrebrand | River Amazon | Malaria ... | ... .. |
| Nov. 7 | Olympia ... | Bombay ... | Influenza ... (5 cases) | ... .. |
| Nov. 8 | Sicily ... | River Plate... | Enteric Fever | Netherfield Road |
| Nov. 8 | Accra ... | West Coast of Africa | Malaria ... (8 cases) | ... .. |
| Nov. 10 | Benue ... | West Coast of Africa | Malaria ... (6 cases) | ... .. |
| Nov. 10 | Western Pride | Jacksonville | Phthisis . | Mill Road ... |
| Nov. 10 | Pak Ling ... | Sourobaya ... | Phthisis ... | ... .. |

REMARKS

Two of the crew, suffered from Malaria during the home passage, but had recovered on arrival in this Port.

The patient was removed to the City Hospital, Fazakerley, and the vessel and bedding disinfected.

A third class passenger, having measles, was removed to Hospital, and the vessel and bedding disinfected.

The patient, a third class passenger, who was deported from Canada. On his arrival in this Port, he proceeded to his home in Staffordshire.

Two members of the crew, Lascars, were removed to Hospital, and disinfection carried out.

One of the crew, having symptoms suspicious of Plague, was removed to the Port Hospital, and disinfection carried out. The sickness proved to be non-infectious.

The case was landed at Lexoes, on the homeward passage.

The cases occurred amongst the crew during the voyage.

The patient, a fireman, was removed to Hospital, and the vessel and bedding disinfected.

The sickness occurred amongst the crew during the voyage.

The cases occurred amongst the crew during the voyage.

The patient was admitted to the West Derby Institution Hospital, Mill Road.

The patient died, and was buried at sea.

| Date 1919. | Name of Vessel. | Where from. | Nature of Sickness | Hospital to which Patient was removed. |
|---------------|-----------------------|-------------------------|--------------------------|--|
| Nov. 10 | Orator ... | San Francisco | Enteric Fever | Netherfield Rd |
| Nov. 13 | Tritonia ... | Savannah ... | Erysipelas ... | ... .. |
| Nov. 13 | Clan McKinlay | Calcutta ... | Pneumonia... | Birkenhead ... |
| Nov. 14 | City of Chester | Bombay ... | Chicken-pox (3 cases) | ... .. |
| Nov. 18 | Fernandina... | Cyprus ... | Enteric Fever | ... .. |
| Nov. 19 | City of Marseilles | Bombay ... | Enteric Fever | Northern ... |
| Nov. 19 | City of Marseilles | Bombay ... | Malaria (5 cases) | ... .. |
| Nov. 19 | City of Marseilles | Bombay ... | Dysentery ... | ... .. |
| Nov. 20 | Elmina ... | West Coast of Africa | Malaria (7 cases) | ... .. |
| Nov. 21 | Baron Jedburgh | Rangoon ... | Malaria (2 cases) | ... .. |
| Nov. 22 | Cedric ... | New York ... | Chicken-pox | Fazakerley ... |
| Nov. 22 | Boulama ... | Sierra Leone | Malaria (3 cases) | ... .. |
| Nov. 25 | Alexandra Woermann | Bombay ... | Influenza ... | ... .. |

REMARKS.

The patient, the storekeeper, was removed to Hospital, and the vessel and bedding disinfected

The chief engineer had suffered from Erysipelas during the voyage.

The patient, one of the crew, was removed to the Birkenhead Institution Hospital.

The sickness occurred on board during the voyage.

The patient, one of the crew, was landed at Gibraltar on the homeward passage.

The patient, a native saloon boy, was removed to the Northern Hospital, and the vessel and bedding disinfected.

The cases occurred amongst the troops during the voyage home.

A lady passenger, suffering from Dysentery, was removed to private apartments for nursing in the City.

The sickness occurred amongst the crew during the voyage.

A seaman and a fireman suffered from Malaria during the passage home.

The patient was removed to Hospital, and the vessel and bedding disinfected.

Three of the crew had Malaria during the voyage.

The four cases, soldiers, were landed at Malta on the homeward passage.

| Date 1919. | Name of Vessel. | Where from. | Nature of Sickness | Hospital to which Patient was removed. |
|---------------|---------------------|-------------------------|-----------------------------|--|
| Nov. 25 | Massilia ... | Bombay ... | Dysentery ... | ... .. |
| Nov. 25 | Eaglet ... | King's Dock | Phthisis ... | Brownlow Hill |
| Nov. 26 | Guildford Castle | Bombay ... | Pneumonia... | ... .. |
| Nov. 26 | Guildford Castle | Bombay ... | Malaria (5 cases) | ... .. |
| Nov. 26 | Minnedosa ... | Montreal ... | Measles ... | ... .. |
| Nov. 26 | Kinderleigh... | Dakar ... | Malaria ... (14 cases) | Northern ... |
| Nov. 27 | Speedwell ... | Penarth ... | Measles ... | ... .. |
| Nov. 27 | Orbita ... | Buenos Ayres | Measles ... (4 cases) | ... .. |
| Dec. 1 | Flaxmere ... | Duala ... | Malaria ... | ... .. |
| Dec. 1 | Albanian ... | Tampico ... | Malaria ... (5 cases) | ... .. |
| Dec. 1 | Colon ... | Valencia ... | Pneumonia... | Royal Infirmary |
| Dec. 2 | Batanga .. | West Coast of Africa | Malaria ... (2 cases) | ... .. |
| Dec. 2 | Castalia .. | Bombay .. | Influenza ... (79 cases) | ... .. |

REMARKS

One of the native crew, a seaman, suffered from Dysentery during the home passage.

Two seamen on board this vessel, who were suffering from Phthisis, were admitted to Brownlow Hill Institution Hospital.

Two deaths from Pneumonia occurred amongst the troops on the homeward voyage.

Five cases of Malaria occurred amongst the troops returning from India.

A third class passenger suffered from Measles during the voyage, but had recovered on arrival.

Thirteen of these occurred during the voyage, the other, who was ill on arrival, was removed to the Northern Hospital.

The patient, the captain of this vessel, was removed to a private Nursing Home in the City, and the vessel disinfected.

Three of the cases were landed at Lisbon, and the other at Southampton.

The sickness occurred during the voyage.

Five of the crew had suffered from Malaria during the voyage.

The patient, one of the officers, was removed to Hospital.

The cases occurred during the voyage.

Twenty of the cases were landed at Port Said, and the others at Gibraltar.

| Date 1919. | Name of Vessel. | Where from. | Nature of Sickness | Hospital to which Patient was removed. |
|---------------|-----------------|--------------|---------------------------|---|
| Dec. 2 | Castalia ... | Bombay ... | Malaria ... (13 cases) | Royal Infirmary |
| Dec. 2 | Lods ... | Duala ... | Suspected Plague | ... .. |
| Dec. 4 | Arvonian ... | Dakar ... | Malaria ... (11 cases) | ... .. |
| Dec. 4 | Modiva ... | Dakar ... | Malaria ... (6 cases) | Toxteth Institu- tion and Royal Infirmary |
| Dec. 5 | Calulu ... | Dakar ... | Malaria ... | Northern ... |
| Dec. 5 | Jolly George | Antwerp ... | Influenza ... | ... .. |
| Dec. 6 | Scandinavian | Montreal ... | Diphtheria ... | ... .. |
| Dec. 6 | Scandinavian | Montreal ... | Measles ... (3 cases) | ... .. |

REMARKS

Eleven of these were landed at Port Said and Gibraltar. The remaining two, on arrival in this Port, were removed to the Royal Infirmary.

This vessel arrived in the Port on the 2nd of December, from Duala and Teneriffe, having on board one case of suspected Bubonic Plague. Three men suffering from Venereal Buboes and one case of Malignant Malaria. These were all removed from the vessel, per ship's boat, to the Port Hospital, New Ferry. The whole ship, as far as possible, was disinfected—crew's quarters, store rooms, cabins, &c., with kerosene emulsion and S.O.₂. The crew were brought ashore and disinfected, together with their clothing, bedding and effects. The vessel was allowed to dock. The usual precautions being observed. The cargo consisted of palm kernels in bags. These were discharged under Port Sanitary supervision, and holed bags emptied and searched. Rat-catchers and rat-searchers were continuously on board. No rats, or traces of them were to be seen. The vessel was fumigated throughout with S.O.₂ when empty, no dead rats being found after fumigation. Bacteriological examination of patients removed to hospital proved that none were suffering from Plague.

All of these were members of the crew who had suffered during the voyage. Seven were ill on arrival; the others had recovered.

The patients were all members of the crew, two of them being removed to the Toxteth Hospital, one to the Royal Infirmary; the others had recovered on arrival.

The patient, one of the crew, was on arrival removed to the Northern Hospital.

One of the crew who had recovered on arrival in this port.

The patient, a 3rd class passenger, being convalescent, proceeded to his home in North Wales.

Two of these were removed to a private home in the City, for nursing, the other proceeded to his home in Royston.

| Date 1917. | Name of Vessel. | Where from. | Nature of Sickness | Hospital to which Patient was removed. |
|---------------|--------------------|----------------------------------|------------------------------|--|
| Dec. 8 | Actor ... | New Orleans | Enteric Fever | Northern ... |
| Dec. 8 | Actor ... | New Orleans | Malaria .. | Southern ... |
| Dec. 9 | Patani ... | West Coast of Africa | Malaria ... (7 cases) | ... .. |
| Dec. 9 | Appam ... | West Coast of Africa | Malaria . (12 cases) | .. ... |
| Dec. 10 | Maronian ... | Alexandria ... | Influenza ... | ... .. |
| Dec. 11 | Norton ... | Constantinople | Suspected Plague | New Ferry ... |
| Dec. 11 | Pendarves ... | West Coast of Africa | Malaria ... | Northern ... |
| Dec. 11 | Darro ... | Buenos Ayres | Pneumonia... | ... .. |
| Dec. 11 | Darro ... | Buenos Ayres | Chicken-pox (2 cases) | ... .. |
| Dec. 15 | Algerian Prince | Alexandria ... for Manchester | Small-pox ... | ... .. |
| Dec. 17 | Derbyshire ... | Rangoon ... | Enteric Fever | ... .. |
| Dec. 17 | Derbyshire ... | Rangoon ... | Influenza ... (110 cases) | ... .. |

REMARKS

The patient was removed to hospital and the vessel and bedding disinfected. The sickness proved to be non-infectious.

One of the crew removed to hospital.

All members of the crew who had suffered during the voyage.

Twelve of the crew had suffered during the voyage.

The patient, the carpenter, was landed at Malta on the homeward passage.

One of the crew, a seaman, who had symptoms suspicious of Plague, was removed to the Port Hospital, New Ferry, for observation; and the vessel and bedding disinfected. The sickness proved to be non-infectious.

The patient, one of the crew, a Fireman, was removed to the Northern Hospital.

The patient was landed at Rio Janeiro on the homeward passage.

Both of these occurred abroad, one being landed at Rio Janeiro, and the other at Lisbon on the home passage.

One of the crew, a Fireman, was landed at Gibraltar on the 10th December, suffering from Smallpox, onset 7th December. The vaccination of crew and disinfection of the vessel was carried out by the Gibraltar Health Authorities. On arrival here, all was found well but four firemen subsequently developed the disease at Manchester five days later.

The case was left in hospital at Aden on the home passage.

The cases, all military, were landed at Port Said, where disinfection was carried out by the Military Authorities.

| Date 1917. | Name of Vessel. | Where from. | Nature of Sickness | Hospital to which Patient was removed. |
|---------------|-----------------------|-------------------------|----------------------------|--|
| Dec. 18 | City of Sparta | Bombay ... | Pneumonia... (5 cases) | ... .. |
| Dec. 18 | City of Sparta | Bombay ... | Suspicious Bubo | New Ferry ... |
| Dec. 19 | Onitsha ... | West Coast of Africa | Malaria ... (5 cases) | ... .. |
| Dec. 19 | Akabo ... | West Coast of Africa | Malaria ... (23 cases) | ... .. |
| Dec. 19 | Lycaon ... | Yokohama ... | Small-pox ... (2 cases) | ... .. |
| Dec. 19 | Continental Bridge | Galveston ... | Anthrax ... | Southern ... |
| Dec. 24 | Corsican ... | Montreal ... | Erysipelas ... | ... .. |
| Dec. 29 | Tzaritsa ... | Alexandria ... | Malaria ... | ... .. |
| Dec. 29 | Palma .. | West Coast of Africa | Malaria ... (4 cases) | ... .. |
| Dec. 29 | Asturian ... | Alexandria ... | Pneumonia... | ... .. |
| Dec. 29 | Arracan ... | Rangoon ... | Enteric Fever (7 cases) | ... .. |

REMARKS

The patients, all Soldiers, were convalescent on arrival in this port.

The patient, a Lascar, was removed to hospital and disinfection carried out. The sickness proved to be non-infectious.

Five members of the crew who had suffered during the voyage.

The patients, members of the crew, had suffered during the voyage.

Both cases occurred abroad, the patients being landed at Singapore on the 4th and 18th of November.

The patient, a Sailor, was removed to the Royal Southern Hospital.

One of the passengers had suffered during the voyage but was convalescent on arrival in this port.

One of the crew who suffered from Malaria during the voyage.

The patients, four of the crew, had suffered from Malaria during the voyage.

The patient, one of the crew, a seaman, was left in hospital at Smyrna.

The cases all occurred abroad and were landed at Rangoon and Columbo.

INSPECTION OF SHIPPING.

Year 1919.

The Inspectors made 5,707 visits and re-visits to vessels during the year.

The following Table indicates the number of visits paid to vessels during the year:—

TABLE 7.

| Nationality. | Visits. | Re-visits. | Total. |
|----------------|--------------|--------------|--------------|
| British ... | 3,108 | 1,496 | 4,604 |
| Norwegian ... | 115 | 110 | 225 |
| Swedish... | 35 | 16 | 51 |
| Spanish... | 106 | 211 | 317 |
| Danish ... | 36 | 10 | 46 |
| Japanese ... | 18 | 9 | 27 |
| Italian ... | 10 | 6 | 16 |
| Portuguese ... | 14 | 25 | 39 |
| Russian... | 7 | 12 | 19 |
| French ... | 9 | 5 | 14 |
| Dutch ... | 38 | 34 | 72 |
| Greek ... | 9 | 15 | 24 |
| American ... | 145 | 76 | 221 |
| Belgian ... | 2 | 7 | 9 |
| Chilian ... | 1 | 5 | 6 |
| Esthonian ... | 1 | 1 | 2 |
| Finn ... | 3 | — | 3 |
| Lettish ... | 1 | — | 1 |
| Roumanian ... | 4 | — | 4 |
| Peruvian ... | 2 | 5 | 7 |
| Total ... | <u>3,664</u> | <u>2,043</u> | <u>5,707</u> |

TABLE

THE FOLLOWING TABLE SHOWS THE NUMBER AND
WERE DETECTED

| NATIONALITY. | Number of Ships. | Dirty Forecasts | Dirty Wash-houses, Store-houses, etc. | Foul Water Casks. | Foul Bilges. | Foul W.C's. | Accumulations of offensive refuse. | Gear stowed in Crew's Quarters | Dump Quarters. | Water lodging on top of Forepeak Tank. | Animals kept, causing nuisance | Leaky Decks overhead. | Stores. |
|----------------|------------------|-----------------|---------------------------------------|-------------------|--------------|-------------|------------------------------------|--------------------------------|----------------|--|--------------------------------|-----------------------|---------|
| British ... | 751 | 1927 | 40 | 1 | ... | 459 | 21 | 5 | 27 | 1 | 3 | 45 | 10 |
| Norwegian ... | 28 | 51 | ... | ... | ... | 10 | 1 | ... | ... | ... | ... | ... | ... |
| Swedish ... | 9 | 18 | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | ... |
| Spanish ... | 42 | 71 | ... | ... | ... | 13 | 1 | ... | 6 | ... | ... | ... | ... |
| Danish ... | 2 | 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... |
| Japanese ... | 2 | ... | 1 | ... | ... | 2 | ... | ... | ... | ... | ... | ... | ... |
| Italian ... | 3 | 7 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Portuguese ... | 5 | 5 | ... | ... | ... | 1 | 3 | ... | 1 | ... | ... | ... | ... |
| Greek ... | 4 | 10 | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... |
| Dutch ... | 1 | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... |
| American ... | 13 | 17 | 1 | ... | ... | 4 | 7 | ... | ... | ... | ... | 1 | ... |
| Finn ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... |
| Russian ... | 2 | 4 | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... |
| Peruvian ... | 1 | 6 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Chilian ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 |
| Roumanian ... | 2 | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... |
| Total ... | 867 | 2122 | 42 | 1 | ... | 492 | 35 | 5 | 31 | 2 | 3 | 49 | 12 |

TABLE 8.

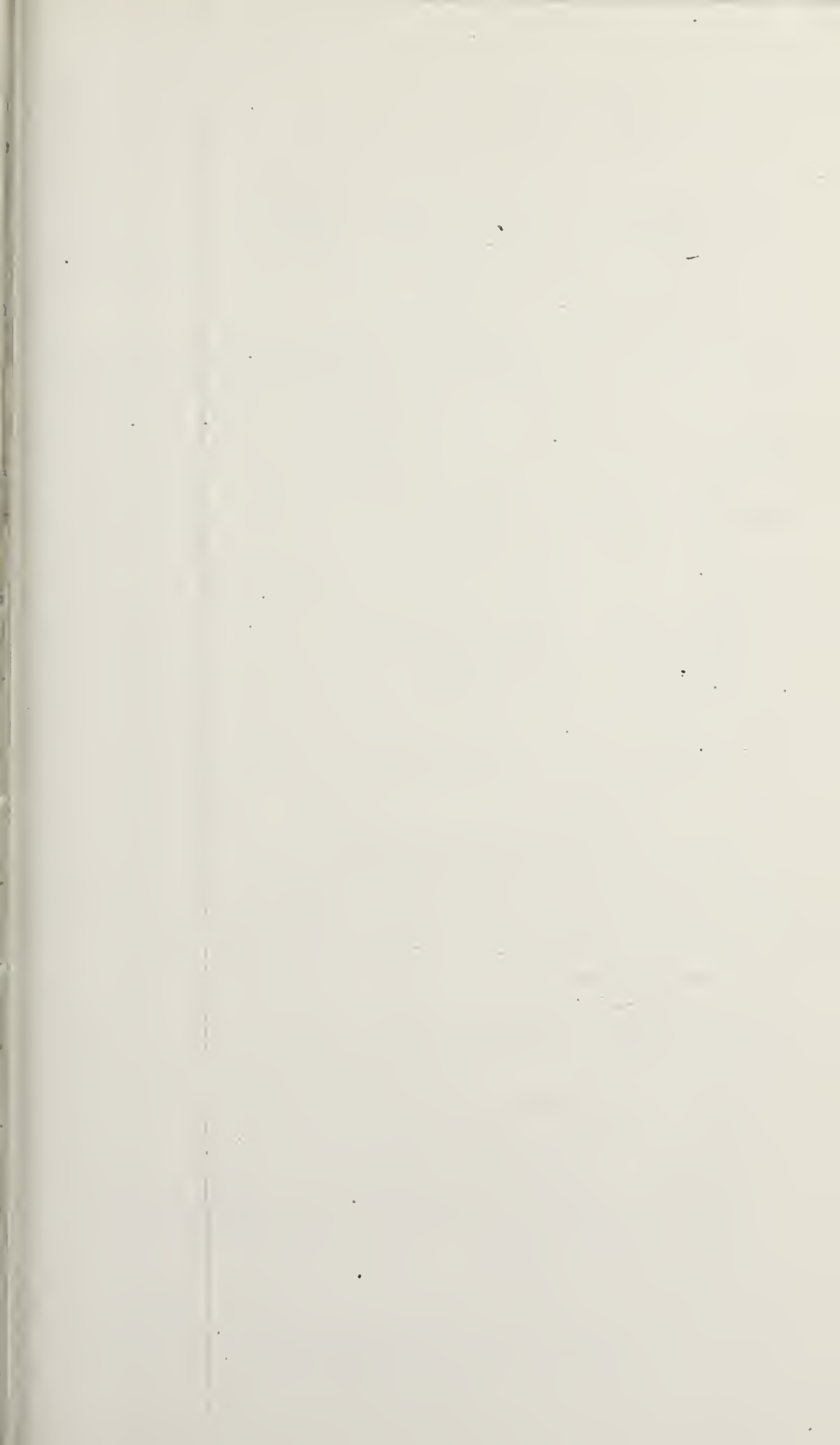
THE FOLLOWING TABLE SHOWS THE NUMBER AND NATION
WERE DETECTED DURING THE

| NATIONALITY. | Number of Ships | Dirty Forecasles | Dirty Wash basins, Store-rooms, etc. | Food Water Casks | Food Bridges | Food W.C.s. | Accumulation of offensive refuse | Garage-stowage in Crew's Quarters | Temp. Quarters | Water lodging on top of cabin or deck in 24 | Animals kept, causing nuisance | Leaky Decks overhead | Defective Stoves | Defective Bathrooms | Ineffective Portholes and Sky Lights |
|--------------|--------------------|---------------------|--|---------------------|-----------------|----------------|-------------------------------------|--------------------------------------|-------------------|--|-----------------------------------|-------------------------|---------------------|------------------------|---|
| Danish | 751 | 1927 | 40 | 1 | ... | 459 | 21 | 5 | 27 | 1 | 3 | 45 | 11 | 14 | 85 |
| Norwegian | 28 | 51 | ... | ... | ... | 10 | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Swedish | 9 | 18 | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | 1 |
| Spanish | 42 | 71 | ... | ... | ... | 13 | 1 | ... | 6 | ... | ... | ... | ... | ... | ... |
| British | 2 | 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... |
| Japanese | 2 | ... | 1 | ... | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Italian | 3 | 7 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Portuguese | 5 | 5 | ... | ... | ... | 1 | 3 | ... | 1 | ... | ... | ... | ... | ... | ... |
| Czech | 4 | 10 | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Polish... | 1 | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| American | 13 | 17 | 1 | ... | ... | 4 | 7 | ... | ... | ... | ... | 1 | ... | 1 | ... |
| French | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | ... | ... |
| Russian | 2 | 4 | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Rumanian | 1 | 6 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Grecian | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 |
| Rumanian | 2 | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... |
| Total | 867 | 2122 | 42 | 1 | ... | 492 | 35 | 5 | 31 | 2 | 3 | 49 | 12 | 15 | 87 |

VESSELS ON THE VESSELS ON WHICH DELICTS

YEAR 1919.

| Defective Plow, in pounds | Defective Plow, in pounds | Defective Plow, in pounds | Defective Plow, in pounds | Defective Plow, in pounds | Defective Plow, in pounds | Defective Plow, in pounds | Defective Plow, in pounds | Defective Plow, in pounds | Defective Plow, in pounds | Defective Plow, in pounds | Defective Plow, in pounds | Total Remedied. |
|------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|--------------------|
| ... | ... | 15 | 8 | 4 | 1 | 13 | 3 | 5 | 20 | 3 | 2716 | 2586 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 62 | 52 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 21 | 20 |
| ... | ... | 1 | ... | ... | ... | 3 | ... | ... | ... | ... | 96 | 73 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 5 | 4 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 | 3 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 7 | 5 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 10 | 9 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 11 | 8 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 33 | 30 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 5 | 5 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 6 | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 | 3 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 | 3 |
| ... | ... | 16 | 8 | 4 | 1 | 16 | 3 | 5 | 20 | 5 | 2684 | 2602 |



SUMMARY OF INSANITARY CONDITIONS.

TABLE 2.

| Class of Vessels. | Number Inspected. | Number on which nuisances were found. | Per cent. |
|-------------------|-------------------|---------------------------------------|-----------|
| FOREIGN— | | | |
| Steamers | 2,024 | 751 | 37.10 |
| Sailing | 45 | 8 | 17.77 |
| Total | 2,069 | 759 | 36.68 |
| COASTWISE— | | | |
| Steamers | 1,364 | 99 | 7.25 |
| Sailing | 231 | 9 | 3.89 |
| Total | 1,595 | 108 | 6.77 |

| Nationality. | Number Inspected. | Number on which Nuisances were found. |
|----------------|-------------------|---------------------------------------|
| British | 3,108 | 751 |
| Foreign | 556 | 116 |
| | 3,664 | 867 |

Nuisances arising through

| Defects of Original Construction. | Per cent of Total Defects. | Structural Defects through wear and tear. | Per cent. of Total Defects. | Dirt, and other conditions prejudicial to health. | Per cent. of Total Defects |
|-----------------------------------|----------------------------|---|-----------------------------|---|----------------------------|
| 49 | 1.64 | 199 | 6.67 | 2,736 | 91.69 |

INSPECTION OF VESSELS FOR EVIDENCES OF RATS AND MICE.

The following places receive special attention whenever a vessel is examined for traces of infestation by rats or mice:—

1. GALLEY, bread lockers and bakehouse (if any).
2. PANTRY and vegetable lockers, etc.
3. FOOD STOREROOMS, bread and flour stores and other places where soft food is stored.
4. GARBAGE RECEPTACLES.
5. SALOONS, FORECASTLES, MESS-ROOMS, and other accommodation.
6. BOATS, CASINGS OF STEAM PIPES, RUDDER CHAINS, etc., vegetable and food lockers on deck.
7. BULKHEADS AND PARTITIONS for traces of runways along pipes, etc.
8. HOLDS, especially in wings of corners and along bilges, and limber boards may require to be lifted. The examining officer carries a strong light, preferably an electric torch. The principal points looked for are:
 - (1) *Dung*, observed as to freshness or otherwise, and note taken whether rat or mouse droppings.
 - (2) *Footmarks*, showing runways or leading to holes, these can often be picked up in dusty places in holds, but generally show as dirty marks on paint or wood work.
 - (3) *Tail marks* where rats climb over transoms, pilasters or beams show as dark streaks.
 - (4) *Holes*, noted as to freshness or otherwise, and endeavours made to ascertain their direction and outlet by a wire, etc.
 - (5) *Traces of gnawing* (in angles or corners) as to freshness or otherwise.
 - (6) *Fragments of food* left scattered by rats and evidences of gnawing of food stuffs, lockers, etc., carefully looked for.

(7) *Nests or nesting material*, old or new, looked for in sheltered places.

(8) *At night, when the ship is quiet*, squeakings and scamperings of rats behind partitions, etc., may be heard and enquiries made. After nightfall a hatch covering may be gently removed and the rat-eater go below provided with an electric torch, remain quiet for a few minutes and then suddenly flash the light round. If there are any rats they become startled and reveal their presence.

The following is an outline of the principal points in rat-proofing of vessels:—

1. **FOOD ROOMS, LOCKERS, etc.**, can usually be rendered rat-proof by means of stout wire netting not more than half-inch mesh, fitted over all openings. The doors should have proper springs to keep them closed. All rat holes should be located and blocked.
2. **RUNWAYS ALONG BEAMS, MOULDINGS, etc.**, should be traced up and blocked by sheet metal or wire netting well secured.
3. **OPENINGS ROUND PIPES** should be blocked by sheet metal or wire netting.
4. **RUNWAYS IN WATERWAYS, etc.**, below deck may be blocked by wire netting.
5. **HOLES** should be blocked with stout sheet metal, well tacked and secured.
6. **GNAWED PLACES** in doors, partitions, etc., may be faced with sheet metal.
7. **COMMUNICATIONS BETWEEN ONE DECK OR COMPARTMENT OF THE VESSEL AND ANOTHER** may require blocking off by wire netted doors or otherwise.
8. **THE BILGES**, especially in old ships, may require blocking off by accessible or removable wire netting screens if they are acting as runways.

The means of destroying rats and mice on shipboard, other than by fumigation, are by traps and poison. No reliance is to be placed on the ship's cat.

Spring (break back) traps are the most effective, but difficult to keep set at sea. *Cage traps* should be large. Either should be baited with *some attractive article of food not readily obtainable by rats on board the ship*, and well smoked with a piece of burning paper after baiting to remove smell of the hands.

Cage traps are best covered over on top by a bag or other material, leaving a small opening in the covering at both ends.

Birdlime Traps.—It is necessary to observe the habits and study the haunts of the rats by close observation before putting the traps down. Rats as a rule run close to the pipes and walls so as to come to the water supply and food, the whiskers of the rat no doubt act as feelers to guide him in the dark, and hence we find their tracks and runs in such situations. The bird-lime preparation is made with linseed oil and resin, and the trays of bird-lime require some attention: it is necessary from time to time to break the surface of the bird-lime layer so as to renew the film, and the trays must be carefully laid during the evening. Some attractive bait should be placed in the centre on a piece of eardboard, and must not be submerged.

The various methods of trapping must be carried out continuously and systematically in all rat-infested places. From the reports of experienced professional rat-eatchers, the rats on ships are becoming more difficult to catch; they are harassed by fumigation and trapping at all ports during the voyage, and as a result they are becoming exceedingly trap shy.

Extermination of Rats in Docks, Quays, etc.

The procedure of primary importance is the searching out and destruction of harbourage for rats.

Rat searchers are continuously employed searching the Dock quays and sheds for evidence of the presence and prevalence of rats. Where such evidence is found the owners or occupiers of the premises are required to take necessary steps to destroy such harbourage for rats as exists.

Steps taken under this heading include such measures as the following:—

Preventing the accumulation of collections of garbage and rubbish, such as "dustbin" refuse, "ship's shakings," old sails and old ropes, etc., and providing for removal as quickly as possible when their accumulation is unavoidable.

Preventing the access of rats to these collections of garbage during the short time that must necessarily ensue between the completion of their collection and the removal, by enclosing them in iron bins with well fitting lids, etc.

Discovery and destruction of nesting places for rats, for instance, gasmeters enclosed in wooden casings, may be packed round with tow or wool, and form ideal nesting places for rats.

Provision of rat-proof receptacles or bins for the storage of food-stuffs, fodder, etc.

Rendering dock sheds and their offices rat-proof by such measures as the following:—

Remaking and relaying floors in concrete when same are damaged or undermined by rats.

Raising the small wooden offices found in the sheds up off the floor to a height of 18ins., and so destroying the harbourage for rats which is often found beneath or behind them, or alternatively closing the entrance to the space between the office and the floor with sheet iron rendered in cement.

Closing of rat holes and runs with cement and glass, etc.

In addition to these all-important preventive measures, rat catchers are continuously employed in trapping and catching rats by means of cage-traps, snap-traps, and birdline trays. It is essential that these men should be skilled and their work supervised.

Poison and virus are not used by the Port Sanitary Authority lest the consequent mortality should confuse the issue with plague.

If and when the rat staff become aware of any sickness or undue mortality amongst the rats in any particular area, extraordinary intensive methods are at once inaugurated. The area is delimited and its boundaries defined—a "natural" boundary not likely to be crossed

by rats, such as an entrance to a dock basin, being selected where possible. The whole staff then concentrate their attention on this area and working from the boundaries to the centre, endeavour to encompass the destruction by the methods described of every single rat in the area. Rat searchers at the same time work outwards from the boundaries and the City authorities co-operate in similar measures in the warehouses and offices, etc., adjoining the affected portion of the Dock Estate. Owners and occupiers of premises do all in their power also to assist and co-operate in these measures.

Destruction of rats on shipboard is frequently accomplished by the fumigation of the entire vessel by sulphur dioxide gas, and the access of rats from ship to shore and vice versa, prevented by affixing rat guards to cables and hawsers, tarring and parcelling ropes, raising gangways when not actually in use. In special cases, the vessel is breasted off from the quay by means of dummy barges, a special watchman posted at the gangway, and the cargo and bales searched for rats. Bags, bales, etc., showing signs of damage by rats are unpacked and searched on the quay immediately. It is important that the finding of sick or dead rats should be at once reported to the Health Authority who will arrange for Bacteriological examination for *B. Pestis* and Chemical examination for poison.

SUPERVISION OF FOOD IMPORTATIONS.

Since 1908, the supervision of the importations of food products has been carried out by the officers of the Port Sanitary Authority, under the regulations of the Local Government Board.

The "Foreign Meat Regulations" deal with certain classes of meats, which it is undesirable to allow to enter the country, although the meat may be perfectly sound. The foreign meats are classified so as to sort out undesirable kinds, *e.g.*, scrap meat, trimmings, etc., may be derived from diseased or unhealthy animals.

By the classification of these meats under these regulations, only the perfectly wholesome varieties and those which bear the official meat inspection stamp of the country of origin, can be admitted.

Imported meats and foods which are unsound or unwholesome are dealt with under the "Unsound Food Regulations," and there are three methods of procedure laid down for dealing with these:—

(1) When the food is obviously unsound and no further examination is necessary, the importers or owners usually voluntarily surrender or remove the goods for immediate destruction under the supervision of the Port Sanitary Authority's Officials.

(2) The unsound food may be of such a character that the question of its industrial utilisation must be considered, e.g., certain meats or fatty materials may be utilised for soap or tallow or manure manufacture, and arrangements are, therefore, made with the importers or owners to have the goods removed to premises where, under the supervision of the Medical Officer of Health, the goods may be utilised in a proper manner for industrial purposes, and not allowed to pass for human food.

(3) Where any difference of opinion arises in regard to the condition of certain imported foods, or as to their disposal, provision is made for an application to be made to a magistrate for his adjudication.

The working of the Regulations has been carried out very satisfactorily during the year, everyone, officials and importers endeavouring to meet the circumstances of each case with the utmost harmony. Considering the enormous quantities and value of the food imports of Liverpool, the absence of any friction points to the careful and efficient administrative work which is being carried out.

In the course of their routine duties, Customs Officers have occasionally to report certain articles of food as, in their opinion, unwholesome. Notifications are accordingly sent to the Food Inspectors, who proceed to deal with the consignment.

The Food Inspection Staff has now resumed its full strength after the war. Several of the staff have been on service, and it is with pleasure that we now record their return to civil duty after, in one case, a protracted convalescence.

The examination carried out by the inspectors consists of a sampling of portions of the consignment and, where necessary, packages may be required to be opened and the contents exposed for full inspection.

Further examination may be necessary, either in cold store or warehouse, and the aid of the City Bacteriologist or Analyst sought in connection with the condition of the food.

The inspection work during the year was very arduous, very large consignments being dealt with. Many consignments of bacon were landed in a heated condition, and very large parcels were utilised industrially by various fat boilers. In some cases the quantity was so great that British fat boilers could not cope with the amount, and arrangements were made to send a very large amount to Holland for industrial utilisation under guarantees.

Two sample boxes of bacon, cured by a "thymol process" were landed in October, the bacon was found to be in excellent condition, and the reports made on it by the City Analyst were of a very satisfactory character.

As the result of a fire on the s.s. "Norlena," and "Highland Heather" a considerable amount of meat goods was damaged, but by careful trimming, etc., much of this was saved.

Several consignments of canned meats were landed in a wet and damaged condition, these cans appeared as rusted and pin holed, and large quantities were rejected and disposed of for animal food.

Boneless beef still continues to arrive not packed in accordance with the Regulations, and in the early part of the year several consignments of offal, etc., consigned to the Army and Navy Canteen Board, were found in a decomposing condition and were destroyed.

Several consignments of pork products were exported owing to breaches of the Regulations.

Towards the end of 1919, ships from Australia and New Zealand landed cargoes of sheep and lambs in a perished and mouldy condition. This was due, probably, to the length of time the carcasses had been in store.

The Government import restrictions having been removed, the imports of apples, oranges, etc., increased. Large consignments of apples were landed from Canada, America, and Australia. Early consignments arrived in fair condition, but later imports were far from satisfactory, many tons having to be destroyed. One of the causes of these wasty

cargoes was, in all probability, that the exporters packed inferior quality fruit, such as "wind blown" and those affected with apple fly, etc., such as are used for canning and drying purposes, as all classes commanded the same price in England. Another cause was stated to be the unsuitability of many of the vessels, built during the war, carrying these cargoes, and great dissatisfaction was expressed amongst British importers.

Oranges were landed from Spain in foreign ships quite unsuitable for this fruit carrying trade, and as a result, large percentages had to be held up and dealt with on the quays. Owing to the exceptionally high prices prevailing, foreign fruit packers preferred to risk packing any class of fruit, which was previously used for pulping or canning. The majority of the Spanish cargoes were landed in the Birkenhead docks.

As in pre-war days, all Jaffa oranges landed have been sorted on the dock quays.

The importation of bananas and tomatoes from the Canary Isles is now free. Large quantities also arrive from the West Indies and Jamaica by Messrs. Elders & Fyffes steamers into Garston Docks.

Dried fruits have been imported in large quantities by the Ministry of Food during the year.

Frequently the unsound dried fruits have been released for vinegar making or other industrial purposes.

A large cargo of 12,000 boxes of prunes arrived in a water damaged condition, and it was suggested to the Ministry of Food to have the goods dealt with without delay. This was complied with, and a considerable saving was accomplished.

Several parcels of fruit have been returned from Army depôts in France and have required careful examination.

From a perusal of the table showing the total quantities of different unsound foodstuffs supervised during the year 1919, it will be seen that, as compared with 1917 and 1918, there has been a considerable reduction, particularly in respect of cereals. This is, no doubt, due to the passing of war conditions. The amounts of unsound fruit and vegetables and canned goods is still high.

TABLE 10.

SHOWING THE NUMBERS OF CATTLE, SHEEP, AND SWINE EXPORTED FROM IRELAND TO LIVERPOOL DURING THE YEAR 1919, AND SHOWING THE PORTS IN IRELAND AT WHICH THE ANIMALS WERE SHIPPED.

| | Cattle. | Sheep. | Swine. |
|--------------------|---------|---------|--------|
| Belfast | 6,996 | 6,331 | — |
| Cork | 30,248 | 23,920 | 3,943 |
| Drogheda | 27,849 | 37,448 | 1,576 |
| Dublin | 113,235 | 179,389 | 6,787 |
| Dundalk | 26,934 | 33,833 | 5,405 |
| Londonderry | 14,529 | 16,401 | 106 |
| Newry | 1,673 | 11,130 | 3,282 |
| Sligo | 6,305 | 21,454 | 1,113 |
| Waterford | 27,103 | 27,068 | 6,973 |
| Total | 254,872 | 356,974 | 29,185 |

TABLE 11.

SHOWING THE TOTAL NUMBERS OF THE SEVERAL KINDS OF CATTLE, SHEEP AND PIGS EXPORTED FROM IRELAND TO LIVERPOOL DURING THE YEAR 1919.

| CATTLE. | No. | SHEEP. | No. |
|------------------------|---------|-----------------|---------|
| Fat | 247,081 | Fat | 203,917 |
| Stores (for fattening) | 5,876 | Stores | 4 |
| Milch Cows | 636 | Lambs | 153,023 |
| Springers | 19 | | |
| Calves | 1,260 | Total Sheep ... | 356,974 |
| Total Cattle ... | 254,872 | | |
| | | PIGS. | |
| | | Fat | 29,058 |
| | | Stores | 127 |
| | | Total Swine ... | 29,185 |

TABLE 12.

STATEMENT SHOWING THE NUMBER OF LIVE CATTLE, &c.,
 LANDED AND SLAUGHTERED AT THE FOREIGN ANIMALS
 WHARF (BIRKENHEAD, ALFRED AND WALLASEY
 LAIRAGES) DURING THE YEARS 1905 TO 1919 INCLUSIVE.

| Year. | LANDED. | | | | SLAUGHTERED. | | | |
|-------|---------|---------|---------|----------------------------------|--------------|---------|--------|----------------------------------|
| | Oxen. | Calves. | Pigs. | Sheep, Lambs and Goats. | Oxen. | Calves. | Pigs. | Sheep, Lambs and Goats. |
| 1905 | 276,725 | 5 | — | 160,105 | 276,273 | 4 | — | 163,705 |
| 1906 | 270,853 | 5 | — | 94,948 | 270,245 | 5 | — | 95,250 |
| 1907 | 214,061 | 2 | — | 97,688 | 215,821 | 2 | — | 94,714 |
| 1908 | 180,283 | — | — | 76,334 | 179,872 | — | — | 79,315 |
| 1909 | 148,233 | 2 | — | 8,053 | 147,812 | 2 | — | 8,053 |
| 1910 | 89,613 | 3 | — | 304 | 90,430 | — | — | 304 |
| 1911 | 78,232 | 2 | — | 40,338 | 79,215 | 1 | — | 39,314 |
| 1912 | 19,167 | — | — | 14,251 | 19,167 | — | — | 14,251 |
| | 143,114 | 819 | 69,016 | 335,291 | 140,854 | 810 | 67,586 | 334,880 |
| 1913 | 3,482 | — | — | — | 3,482 | — | — | — |
| | 351,276 | 930 | 104,274 | 449,344 | 90,857 | 174 | 15,493 | 131,241 |
| 1914 | — | — | — | 1,707 | — | — | — | 1,707 |
| | 333,115 | 248 | 65,242 | 357,528 | 171,716 | 121 | 16,876 | 153,562 |
| 1915 | 235,620 | — | 60,791 | 288,260 | 100,560 | — | 2,353 | 94,237 |
| 1916 | 270,117 | 2 | 84,509 | 377,753 | 137,346 | — | 2,210 | 134,794 |
| 1917 | 257,781 | 14 | 48,013 | 424,992 | 127,436 | 4 | 655 | 171,720 |
| 1918 | 178,893 | 17 | 28,723 | 446,039 | 162,174 | — | 409 | 219,815 |
| 1919 | 252,790 | 577 | 29,052 | 362,137 | 175,302 | — | 591 | 251,227 |

Ordinary type represents Foreign. Heavy type represents Irish.

TABLE 13.

SHOWING THE IMPORTS OF MEATS (EXCEPT POULTRY AND GAME) INTO THE PORT OF LIVERPOOL DURING THE YEARS 1915, 1916, 1917, and 1918.

| Description. | Years. | | | |
|--|-------------|-------------|-------------|-------------|
| | 1915. | 1916. | 1917. | 1918. |
| | £ | £ | £ | £ |
| Bacon | 10,719,819 | 15,827,493 | 18,181,829 | 36,832,954 |
| Beef, fresh and refrigerated ... | 11,378,711 | 8,880,454 | 8,297,884 | 16,470,701 |
| Beef, salted | 70,777 | 67,426 | 86,563 | 66,238 |
| Hams | 3,383,667 | 4,114,569 | 3,983,618 | 6,843,531 |
| Mutton, fresh and refrigerated... | 2,443,754 | 2,751,913 | 2,116,322 | 2,128,352 |
| Pork, fresh and refrigerated ... | 324,167 | 966,652 | 469,406 | 424,056 |
| Pork, salted | 71,083 | 85,791 | 56,604 | 17,544 |
| Rabbits | 159,215 | 163,667 | 180,106 | 123,468 |
| Unenumerated fresh, refrigerated and salted... .. | 801,044 | 1,101,843 | 1,214,946 | 930,022 |
| Preserved, otherwise than by salting | 1,941,010 | 3,663,457 | 6,160,807 | 9,443,132 |
| Totals | £31,293,277 | £37,628,265 | £40,748,085 | £73,279,998 |

TABLE 14.

SHOWING THE QUANTITY OF UNSOUND MEATS SUPER-
VISED AND UTILISED DURING THE YEARS 1911 TO 1919.

| Year. | Beef. | | | | Mutton. | | | | Pork. | | | |
|-----------|-------|-------|------|------|---------|-------|------|------|-------|-------|------|------|
| | Tons. | cwts. | qrs. | lbs. | Tons. | cwts. | qrs. | lbs. | Tons. | cwts. | qrs. | lbs. |
| 1911..... | 659 | 10 | 2 | 24 | 18 | 7 | 0 | 13 | 6 | 4 | 2 | 20 |
| 1912..... | 684 | 8 | 3 | 0 | 475 | 12 | 1 | 2 | 9 | 12 | 3 | 18 |
| 1913..... | 88 | 0 | 3 | 12 | 76 | 16 | 0 | 13 | 1 | 4 | 2 | 15 |
| 1914..... | 441 | 5 | 2 | 0 | 47 | 5 | 2 | 2 | 1 | 5 | 0 | 2 |
| 1915..... | 221 | 7 | 0 | 10 | 23 | 14 | 0 | 4 | 2 | 8 | 3 | 21 |
| 1916..... | 108 | 16 | 0 | 13 | 4 | 10 | 0 | 24 | 1 | 14 | 1 | 16 |
| 1917..... | 510 | 9 | 3 | 14 | 24 | 11 | 3 | 20 | 0 | 14 | 3 | 16 |
| 1918..... | 281 | 9 | 0 | 25 | 55 | 15 | 0 | 22 | 4 | 14 | 1 | 4 |
| 1919..... | 150 | 12 | 3 | 22 | 45 | 18 | 0 | 16 | — | 8 | 0 | 8 |

TABLE 15.

SHOWING THE QUANTITY OF UNSOUND OFFAL SUPER-
VISED AND UTILISED DURING THE YEARS 1911 TO 1919.

| Year. | Beef. | Mutton. | Pork. | Veal. |
|-----------|----------------|----------------|---------------|---------------|
| 1911..... | 32,816 pieces. | 56,596 pieces. | 8,629 pieces. | 1,070 pieces. |
| 1912..... | 68,272 „ | 57,163 „ | 8,229 „ | 196 „ |
| 1913..... | 23,055 „ | 66,705 „ | 12,946 „ | 64 „ |
| 1914..... | 36,561 „ | 41,293 „ | 1,919 „ | 44 „ |
| 1915..... | 55,219 „ | 185,551 „ | 5,644 „ | 233 „ |
| 1916..... | 63,900 „ | 126,110 „ | 2,765 „ | 15 „ |
| 1917..... | 39,466 „ | 13,212 „ | 12,460 „ | 946 „ |
| 1918..... | 27,216 „ | 51,755 „ | 24 „ | — |
| 1919..... | 103,613 „ | 61,844 „ | 76,814 „ | 19 „ |

TABLE 16.
SHOWING THE QUANTITY AND DESCRIPTION OF OFFAL CONDEMNED
DURING THE YEAR 1919.

| Name of Organ. | Beef. | | Mutton. | | Pork. | | Veal. | |
|-----------------|---------|--------------------|---------|--------------------|---------|--------------------|---------|--------------------|
| | Number. | Weight, Pounds. | Number. | Weight, Pounds. | Number. | Weight, Pounds. | Number. | Weight, Pounds. |
| Livers... | 6,386 | 67,481 | 1,934 | 1,870 | 84 | 166 | 16 | 69 |
| Kidneys ... | 85,191 | 79,571 | 17,299 | 1,935 | 230 | 115 | — | — |
| Sweetbreads ... | 304 | 38 | 35,977 | 4,578 | — | — | — | — |
| Tripe ... | 5,121 | 48,812 | — | — | — | — | — | — |
| Skirts ... | 3,165 | 4,203 | — | — | — | — | — | — |
| Hearts ... | 809 | 2,552 | 430 | 156 | 390 | 180 | — | — |
| Tongues ... | 437 | 11,648 | — | — | 74,248 | 37,124 | 1 | 1 |
| Tails ... | 1,133 | 2,224 | — | — | — | — | — | — |
| Heads ... | — | — | 5 | 13 | — | — | 2 | 12 |
| Cheeks ... | 976 | 1,481 | 532 | 256 | 14 | 56 | — | — |
| Plucks ... | 91 | 25 | 5,767 | 12,797 | 1,848 | 616 | — | — |
| Totals ... | 103,613 | 218,036 | 61,844 | 21,615 | 76,814 | 38,257 | 19 | 82 |

The organs dealt with above were rejected for various reasons, notably, decomposition and diseased conditions, such as Cysts, Inflammation, &c.

TABLE SHOWING THE QUANTITY AND DESCRIPTION OF UNSOUND MEATS
SUPERVISED* DURING THE YEAR 1919.

| DESCRIPTION. | TOTAL WEIGHT. | | | CAUSE OF DESTRUCTION. | | | | | | | | | |
|--------------|---------------|-------|-----------|-----------------------|-------|--|------|--|-------|------|------|---|----|
| | | | | Tubercular. | | Brine Stained, Mouldy and Decomposed. | | Other causes. (Emaciation, Dropsy and Pleurisy) | | | | | |
| | Tons | cwts. | qrs. lbs. | Tons | cwts. | qrs. | lbs. | Tons | cwts. | qrs. | lbs. | | |
| Beef | 150 | 12 | 3 22 | — | — | 147 | 15 | 2 | 17 | 2 | 17 | 1 | 5 |
| Mutton..... | 45 | 18 | 0 16 | — | — | 45 | 17 | 1 | 4 | 0 | 0 | 3 | 12 |
| Pork | 0 | 8 | 0 8 | 0 | 0 | 0 | 4 | 1 | 4 | 0 | 3 | 0 | 14 |
| Veal | 0 | 10 | 3 11 | — | — | 0 | 10 | 3 | 11 | — | — | — | — |
| Total..... | 197 | 10 | 0 1 | 0 | 0 | 194 | 8 | 0 | 8 | 3 | 1 | 1 | 3 |

* These were destroyed or allowed to go for industrial purposes to the satisfaction of the Medical Officer.

TABLE 18.

SHOWING QUANTITIES OF UNSOUND GENERAL FOOD-STUFFS SUPERVISED AND UTILISED DURING THE YEAR 1919.

| Description. | No. of Tins. | Weight in Pounds. | Description. | No. of Tins. | Weight in Pounds. |
|----------------------|--------------|-------------------|------------------|--------------|-------------------|
| Canned Goods— | | | | | |
| Almonds ... | 152 | 2736 | Mutton ... | 3519 | 19850 |
| Apples ... | 25991 | 78721 | Potted Meat ... | 615 | 154 |
| Apricots ... | 684 | 1730 | Ox Tongues ... | 8450 | 21292 |
| Apricot Pulp ... | 18816 | 172264 | Ox Tails ... | 1310 | 2620 |
| Asparagus ... | 3336 | 8340 | Kidneys ... | 1618 | 1416 |
| Blackberries ... | 221 | 1485 | Soups ... | 556 | 2660 |
| Cherries ... | 6432 | 15168 | Fish ... | 39 | 44 |
| Fruits ... | 3630 | 7620 | Pilchards ... | 7198 | 7198 |
| Greengages ... | 213 | 481 | Sardines ... | 49213 | 14420 |
| Peaches ... | 7297 | 15626 | Sardine Paste... | 27039 | 13520 |
| Pears ... | 1535 | 5577 | Salmon ... | 4304 | 4310 |
| Pine Apple ... | 9246 | 21368 | Salmon Paste... | 10368 | 2592 |
| Plums ... | 2375 | 4642 | Tunny Fish ... | 193 | 96 |
| Prunes... | 612 | 5536 | Crab ... | 2139 | 1069 |
| Tomatoes ... | 21646 | 51468 | Rabbits ... | 831 | 1662 |
| Tomato Pulp | 400 | 4400 | Milk Condensed. | 853179 | 752958 |
| Strawberries ... | 1936 | 2285 | Milk Evaporated | 80448 | 60336 |
| Beef ... | 215120 | 984205 | Egg Pulp ... | 186 | 8888 |

| Description. | | | | Packages. | Weight. | | | |
|----------------|-----|-----|-----|-----------|---------|-------|------|------|
| Fruit (Fresh)— | | | | | Tons. | Cwts. | Qrs. | Lbs. |
| Apples ... | ... | ... | ... | 6184 | 252 | 15 | 3 | 7 |
| „ loose ... | ... | ... | ... | — | 2 | 5 | 0 | 0 |
| Melons ... | ... | ... | ... | 1908 | 97 | 3 | 0 | 24 |
| „ loose ... | ... | ... | ... | — | 55 | 0 | 0 | 0 |
| Pears ... | ... | ... | ... | 1044 | 12 | 0 | 2 | 0 |

TABLE 18—continued:

| Description. | Packages. | Weight. | | | |
|--------------------------|-----------|---------|-------|------|------|
| | | Tons. | Cwts. | Qrs. | Lbs. |
| Fruit (Fresh) continued— | | | | | |
| Bananas... .. | 10,011 | 542 | 2 | 0 | 1 |
| „ loose | — | 24 | 0 | 0 | 0 |
| Grapes | 1 812 | 32 | 3 | 2 | 8 |
| Tomatoes | 2,461 | 47 | 5 | 1 | 0 |
| Lemons... .. | 360 | 15 | 4 | 1 | 14 |
| „ loose | — | 36 | 9 | 0 | 0 |
| Oranges | 6,702 | 262 | 19 | 2 | 19 |
| „ loose | — | 465 | 4 | 1 | 20 |
| Grape Fruit | 127 | 3 | 10 | 3 | 6 |
| „ loose | — | 3 | 0 | 0 | 0 |
| Cocoanuts | 548 | 24 | 9 | 1 | 4 |
| Chestnuts | 500 | 22 | 6 | 1 | 20 |
| „ loose | — | 2 | 8 | 0 | 0 |
| Nuts | 137 | 5 | 13 | 1 | 14 |
| „ loose | — | 13 | 13 | 3 | 20 |
| Pomegranates | 165 | 5 | 8 | 3 | 20 |
| Fruit (Dried)— | | | | | |
| Dates | 9 | 0 | 5 | 2 | 14 |
| Figs | 127 | 10 | 18 | 1 | 14 |
| Currants | 138 | 4 | 16 | 3 | 26 |
| Raisins | 923 | 14 | 13 | 2 | 15 |
| „ loose | — | — | 9 | 2 | 0 |
| Sultanas | 43 | 19 | 0 | 0 | 22 |
| Vegetables— | | | | | |
| Potatoes... .. | 92 | 4 | 12 | 0 | 0 |
| „ loose... .. | — | 225 | 0 | 0 | 0 |
| Onions | 1,677 | 82 | 14 | 2 | 22 |
| „ loose | — | 77 | 9 | 0 | 20 |
| Turnips | 48 | 2 | 6 | 2 | 14 |
| Gherkins | 46 | 13 | 16 | 0 | 4 |

TABLE 18--continued.

| Description. | | | | | Packages. | Weight. | | | |
|-----------------|-----|-----|-----|-----|-----------|---------|-------|------|------|
| Cereals— | | | | | | Tons. | Cwts. | Qrs. | Lbs. |
| Wheat | ... | ... | ... | ... | — | 2,202 | 8 | 2 | 0 |
| Maize | ... | ... | ... | ... | — | 318 | 11 | 1 | 20 |
| Oats | ... | ... | ... | ... | — | 90 | 19 | 2 | 4 |
| Barley | ... | ... | ... | ... | — | 14 | 2 | 0 | 12 |
| Peas | ... | ... | ... | ... | — | 4 | 4 | 3 | 8 |
| Beans | ... | ... | ... | ... | — | 3 | 16 | 0 | 0 |
| Rye | ... | ... | ... | ... | — | 41 | 13 | 3 | 20 |
| Flour | ... | ... | ... | ... | — | 25 | 7 | 0 | 13 |
| Rice | ... | ... | ... | ... | — | 263 | 11 | 0 | 8 |
| Rolled Oats | ... | ... | ... | ... | — | 74 | 15 | 1 | 8 |
| Oatmeal... | ... | ... | ... | ... | — | 14 | 0 | 0 | 0 |
| Farina | ... | ... | ... | ... | — | 5 | 0 | 0 | 0 |
| Shredded Wheat | ... | ... | ... | ... | — | 1 | 17 | 1 | 13 |
| General— | | | | | | | | | |
| Bacon | ... | ... | ... | ... | 3,732 | 864 | 17 | 2 | 8 |
| „ loose | ... | ... | ... | ... | — | 15 | 12 | 2 | 27 |
| Ham loose | ... | ... | ... | ... | — | 2 | 4 | 3 | 4 |
| Cheese, loose | ... | ... | ... | ... | — | — | 1 | 1 | 18 |
| Rabbits | ... | ... | ... | ... | 5,958 | 0 | 0 | 0 | 0 |
| „ loose | ... | ... | ... | ... | — | — | — | — | — |
| Eggs, single | ... | ... | ... | ... | 15,276 | 0 | 15 | 2 | 19 |
| Poultry, single | ... | ... | ... | ... | 5,747 | 9 | 7 | 1 | 16 |
| Fish | ... | ... | ... | ... | 1,653 | 67 | 6 | 0 | 8 |
| Ginger | ... | ... | ... | ... | 1,203 | 48 | 6 | 2 | 16 |
| Butter | ... | ... | ... | ... | — | — | 4 | 0 | 2 |
| Sausages | ... | ... | ... | ... | 6,229 | 159 | 0 | 2 | 13 |

TABLE 18—*continued.*

| Description. | Packages. | Weight. | | | |
|----------------------|-----------|---------|-------|------|------|
| General—continued. | | Tons. | Cwts. | Qrs. | Lbs. |
| Horse Flesh | — | 1 | 17 | 1 | 25 |
| Tea | — | — | — | — | — |
| Margarine | 91 | 1 | 2 | 3 | 0 |
| Milk | 38 | 5 | 1 | 0 | 8 |
| Polonies | — | — | 9 | 3 | 8 |
| Confectionery | 4 | 0 | 1 | 0 | 0 |

TABLE 19.

SHOWING THE TOTAL QUANTITIES OF THE DIFFERENT
UNSOUND FOODSTUFFS SUPERVISED DURING THE
YEAR 1919.

| | Tons. | Cwts. | Qrs. | Lbs. |
|--|-------|-------|------|------|
| Beef, Mutton, Pork and Veal... | 197 | 10 | 0 | 1 |
| Offal (Beef, Mutton, etc.) ... | 124 | 2 | 0 | 6 |
| Canned Goods | 1,026 | 4 | 1 | 21 |
| Fruit and Vegetables | 2,381 | 6 | 1 | 20 |
| Cereals | 3,060 | 7 | 0 | 22 |
| General (Fish, Poultry, Rabbits, etc.) | 1,176 | 9 | 0 | 4 |
| | 7,965 | 19 | 0 | 18 |

TABLE 20.

Showing comparative Value of the more important Food Stuffs imported at the principal Ports during the year 1919.

| | London. 1 | Liverpool. 2 | Glasgow. 3 | Bristol. 4 | Hull. 5 | Man- chester. 6 | South- ampton. 7 | Newcastle. 8 | Leith. 9 | Harwich. 10 |
|------------------------|--------------|-----------------|---------------|---------------|------------|-----------------------|------------------------|-----------------|-------------|----------------|
| | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ |
| Animals | — | — | — | — | — | — | — | — | — | — |
| Butter | 9,840,287 | 5,554,086 | 155,349 | 221,330 | 1,381,551 | 11,812 | 18,082 | — | — | — |
| Cheese | 6,463,404 | 5,174,204 | 1,361,914 | 1,048,872 | 553,431 | 587,365 | 1,324,489 | 460,165 | — | 101,717 |
| Cocoa | 1,390,981 | 1,523,860 | — | 42,592 | — | — | 222,025 | — | 198,601 | 65,237 |
| Coffee | 172,652 | 314,029 | — | — | — | — | 555 | — | — | 5,602 |
| Grain | 44,367,698 | 47,132,949 | 12,288,236 | 9,927,700 | 7,999,617 | 8,179,595 | 567,069 | 1,302,615 | 705,720 | — |
| Eggs | 1,496,506 | 2,261,087 | 104,151 | 227,251 | 2,152,657 | 135,309 | 5,839 | 801,689 | — | — |
| Fish | 5,603,131 | 7,287,083 | — | 154,820 | 821,338 | — | 26,048 | 707,550 | 544,196 | 3,440 |
| Fruit | 4,350,050 | 5,967,199 | — | 1,189,897 | 317,569 | 508,238 | 1,261,791 | 152,115 | — | — |
| Lard | 6,031,556 | 11,009,614 | 1,488,001 | 1,070,927 | 610,321 | 746,864 | 83,415 | — | — | — |
| Margarine | 2,964,279 | 3,423,611 | 112,041 | — | 690,553 | — | — | — | — | 156,339 |
| MEAT:— | | | | | | | | | | |
| Bacon | 27,792,153 | 36,832,954 | 8,112,135 | 6,132,029 | 3,752,657 | 4,872,557 | 385,555 | 104,085 | 889,444 | — |
| Beef, Fresh | 12,872,339 | 16,470,701 | 486,065 | 1,361,607 | 68,826 | 688,257 | 2,831,839 | — | — | — |
| " Salted | — | 66,238 | — | — | — | — | — | — | — | — |
| Hams | 2,103,071 | 6,843,531 | 1,401,529 | 653,368 | 800,939 | 871,510 | 36,841 | — | — | — |
| Mutton, Fresh | 5,937,081 | 2,128,352 | 191,338 | 227,814 | — | — | 457,863 | — | — | — |
| Pork, Fresh | 279,818 | 424,056 | — | — | — | — | — | — | — | — |
| " Salted | — | 17,544 | — | — | — | — | — | — | — | — |
| Rabbits | 998,704 | 123,468 | — | — | — | — | — | — | — | — |
| Unenumerated | 1,927,163 | 930,022 | — | — | 3,546 | — | — | — | — | — |
| Preserved | 5,762,939 | 9,443,132 | 300,318 | 694,830 | 302,209 | 889,961 | 495,577 | — | — | — |
| Milk, Condensed | 3,670,892 | 5,911,569 | 1,076,111 | 470,917 | 589,020 | 468,136 | — | 12,217 | 98,125 | 26,288 |
| Poultry and Game | 97,951 | 172,153 | — | — | — | — | 7,937 | — | — | — |
| Sugar | 16,297,293 | 12,202,137 | 475,133 | 623,859 | 69,442 | 683,792 | 17,401 | 85 | 124,424 | 33,632 |
| Vegetables | 1,502,395 | 1,266,998 | 170,415 | 428,895 | 404,644 | 348,675 | 1,485,123 | 19,164 | 6,089 | 114 |

E M I G R A T I O N .

There was a marked increase in the number of emigrants leaving the Port of Liverpool during the year 1919, the number being 120,187, an increase of 106,599, compared with the previous year, when the number of emigrants leaving the Port was 13,588. This is, of course, accounted for by the termination of the European war.

The following is a return of the number of emigrants and clearances of ships, including those passenger vessels in which medical inspection was not required, from 1900-1919.

TABLE 21.

In 1900, 149,884 Emigrants, and 660 Clearances of Ships.

| | | | |
|-----------------|---|-------|---|
| „ 1901, 167,452 | „ | 761 | „ |
| „ 1902, 214,113 | „ | 791 | „ |
| „ 1903, 265,918 | „ | 902 | „ |
| „ 1904, 274,584 | „ | 924 | „ |
| „ 1905, 277,536 | „ | 983 | „ |
| „ 1906, 352,818 | „ | 1,090 | „ |
| „ 1907, 385,797 | „ | 1,102 | „ |
| „ 1908, 212,155 | „ | 1,113 | „ |
| „ 1909, 253,400 | „ | 1,117 | „ |
| „ 1910, 336,088 | „ | 1,149 | „ |
| „ 1911, 312,027 | „ | 1,153 | „ |
| „ 1912, 323,187 | „ | 1,165 | „ |
| „ 1913, 347,541 | „ | 1,199 | „ |
| „ 1914, 232,954 | „ | 1,065 | „ |
| „ 1915, Nil | „ | Nil | „ |
| „ 1916, Nil | „ | Nil | „ |
| „ 1917, 18,908 | „ | 379 | „ |
| „ 1918, 13,588 | „ | 287 | „ |
| „ 1919, 120,187 | „ | 673 | „ |

The following Tables, Nos. 22 and 23, relating to Emigration have been kindly supplied by the Board of Trade.

TABLE 22.

Statement showing the Number of Passengers of British and Foreign Nationality that left the Port of Liverpool for places out of Europe in the Year 1919 :—

| DESTINATION. | British Subjects. | Aliens. | Total. |
|--|-------------------|---------|---------|
| British North America ... | 72,575 | 1,470 | 74,045 |
| Australia and New Zealand | 2,581 | — | 2,581 |
| British South Africa ... | 801 | 27 | 828 |
| India (including Ceylon)... | 5,817 | 67 | 5,884 |
| Other British Colonies and Possessions ... | 7,017 | 437 | 7,454 |
| Total British Empire ... | 88,791 | 2,001 | 90,792 |
| United States | 15,754 | 6,536 | 22,290 |
| Other Foreign Countries | 5,898 | 1,207 | 7,105 |
| Total Foreign Countries... | 21,652 | 7,743 | 29,395 |
| Grand Total ... | 110,443 | 9,744 | 120,187 |

TABLE 23.

Number of Passengers of British and Foreign Nationality, as given in Table No. 22, that sailed from the Port of Liverpool, in each month of the year 1919:—

| MONTH. | British Subjects. | Aliens. | Total. |
|-----------------|-------------------|---------|---------|
| January | 2,579 | 593 | 3,172 |
| February | 5,042 | 567 | 5,609 |
| March | 10,453 | 608 | 11,151 |
| April | 8,404 | 843 | 9,247 |
| May | 9,553 | 822 | 10,375 |
| June | 9,597 | 739 | 10,336 |
| July | 7,803 | 682 | 8,485 |
| August | 11,184 | 868 | 12,052 |
| September... .. | 13,021 | 889 | 13,910 |
| October | 14,130 | 1,115 | 15,245 |
| November | 9,853 | 556 | 10,409 |
| December | 8,824 | 1,372 | 10,196 |
| Total | 110,443 | 9,744 | 120,187 |

VENEREAL DISEASES.

The facilities for the treatment of Venereal Diseases is a subject of immense importance to a seafaring population. Under the Regulations of the Local Government Board, a scheme for free treatment at various Liverpool hospitals was inaugurated in 1917. These facilities were extended from time to time as opportunity offered, and on the whole proved a success, seamen and others taking full advantage of the free treatment offered at the clinics.

It has long been the practice for the Boarding Medical Officers of the Port of Liverpool to hand to sufferers pamphlets giving information and advice regarding the nature of the complaints, and indicating a suitable hospital at which the patient was advised to attend.

Clinics were originally established at the Royal Infirmary, Royal Southern Hospital, Skin Hospital, and the Cancer and Skin Hospital. Subsequently clinics were opened at the Stanley Hospital and the David Lewis Northern Hospital.

Facilities have been provided for the examination of all material by the City Bacteriologist. This examination includes Wassermann tests, examination for Gonococci, Spirochaetes, etc., and below will be found a tabulated statement of the work done by this Department during the year.

| LIVERPOOL— | | | | Specimens examined. |
|--|-----|-----|-----|---------------------|
| Detection of Spirochaetes | ... | ... | ... | 15 |
| Detection of Gonococci | ... | ... | ... | 318 |
| Wasserman Reaction for Syphilis | ... | ... | ... | 2,839 |
| Still Births | ... | ... | ... | 321 |
| Ophthalmia cases | ... | ... | ... | 150 |
| Total number of Liverpool specimens examined | | | | 3,643 |
| Number of specimens examined for outside | | | | |
| Authorities (mostly Wassermann Reaction) | | | | 2,098 |
| Grand Total | | | | 5,741 |

As the majority of the specimens sent are from patients suspected to be suffering from Syphilis or undergoing treatment, several specimens of blood may be sent from one case at different times, and, therefore, any percentages as to positive and negative results would be of no value.

A very large amount of work of this character is also carried out at the Royal Infirmary in connection with patients attending that Institution.

Whilst some of the Centres for treatment have reached a high standard of efficiency, the Royal Infirmary has had the largest number of patients on its books, so much so that certain adjustments have had to be made from time to time, both in the medical personnel and in the hours of the clinics.

The in-patient accommodation of the Royal Infirmary has not been sufficient to cope with the numbers requiring in-patient treatment, and arrangements have been made for suitable transfers from one hospital to the other as circumstances require.

A recent development in connection with the Scheme is the introduction of auxiliary treatment and more irrigation facilities for gonorrhoea patients requiring regular treatment, and these facilities for irrigation are available almost daily and are fully utilised at nearly all the clinics.

At these clinics the treatment of patients is alone contemplated, but facilities are also provided for disinfection of those who have been exposed to the risk of infection. Additional evening clinics have been provided at the various hospitals to meet needs of cases where it is impossible for workers to attend at usual times. It has been felt that it would be useful if centrally situated premises could be obtained where seamen of all nationalities and suffering from ill health of any kind could be seen and directed to clinics suitable for their particular ailment, and amongst these Venereal Diseases would be met very largely. It has not been possible so far to get premises suitable for this purpose, but the subject has not been lost sight of.

The existing arrangements have, therefore, given successful results, as will be seen from the accompanying tables.

TABLE SHOWING TOTAL NUMBER OF NEW CASES OF
VENEREAL DISEASE AND THE ATTENDANCES AT
VARIOUS CITY CLINICS DURING THE YEAR 1919.

| Hospital. | Date of opening. | New cases. | Attendances. | Ceased to attend before cure completed. |
|----------------------------|------------------|------------|--------------|---|
| Royal Infirmary..... | 1/8/1917 | 3,851 | 36,624 | 2,530* |
| Cancer and Skin..... | 31/1/1918 | 1,059 | 18,266 | 326 |
| Royal Southern | 7/9/1917 | 547 | 2,626 | 61 |
| David Lewis Northern | 23/6/1919 | 321 | 2,771 | 50 |
| Stanley | 7/7/1919 | 151 | 1,189 | 10 |

* Figures not comparable owing to different system of time limitation.

It is of interest to note that, of the large numbers attending the Royal Infirmary Clinic, fully one-third are seamen.

TABLE SHOWING CLASSIFICATION OF CASES ATTENDING
THE LIVERPOOL ROYAL INFIRMARY DURING 1919.

| | NEW CASES. | | | CEASED TO ATTEND BEFORE CURE COMPLETED. | | | TOTAL ATTENDANCES. | | |
|---|------------|-----|--------|---|-----|--------|--------------------|-------|--------|
| | M. | F. | Total. | M. | F. | Total. | M. | F. | Total. |
| philis* | 1,257 | 323 | 1,580 | 1,020 | 331 | 1,369 | 15,155 | 5,175 | 20,330 |
| gonorrhœa* | 1,519 | 112 | 1,631 | 1,102 | 59 | 1,161 | 14,636 | 551 | 15,187 |
| Chancere | 10 | — | 10 | — | — | — | 22 | — | 22 |
| suspected cases examined and found to be free from V.D. | 556 | 74 | 630 | — | — | — | 966 | 119 | 1,085 |
| Total | 3,342 | 509 | 3,851 | 2,122 | 390 | 2,530 | 30,779 | 5,845 | 36,624 |

* Of these, 63 males and 15 females were found to be suffering from Syphilis and Gonorrhœa as concurrent infections.

The Royal Commission in their Report stated that the most important subject to be considered in the treatment and prevention of Venereal Diseases is the establishment of free treatment centres, readily available for all sufferers.

Schemes for this free treatment have now been provided in almost all the large centres of population.

The existing arrangements at the clinics provide for treatment of patients, so that so far as possible, they will not be singled out or made conspicuous. Free supplies of Salvarsan substitutes have been made available by the Health Department to those medical practitioners who are qualified to receive them. The Drugs have been stocked and issued by Professor Beattie.

The following drugs have been issued by the Department to Institutions and medical practitioners during the year 1919:—

| | | | | | | |
|---------------------|-----|-----|-----|-----|-----|---------------|
| Neokharsivan | ... | ... | ... | ... | ... | 14,500 doses. |
| Kharsivan | ... | ... | ... | ... | ... | 250 „ |
| N.A.B. | ... | ... | ... | ... | ... | 5,000 „ |
| Glucose Galyl | ... | ... | ... | ... | ... | 400 „ |
| Intravenous Galyl | ... | ... | ... | ... | ... | 80 „ |
| Intramuscular Galyl | ... | ... | ... | ... | ... | 70 „ |

About one-sixth of these drugs has been issued to 32 medical practitioners.

The great defect of the present system is that no compulsion can be exercised on patients to continue their course of treatment until cured, or even reported as free from infection. As will be seen from the Table appended, large numbers of patients give up treatment when the local manifestations (such as pain, discomfort, etc.) of the disease have subsided..

In Liverpool much has been done to get these patients back again to the clinics for continued treatment, *e.g.*, appropriately worded little cards have been sent by the Medical Officers of the clinics asking the patients to return, visits have been paid by a special female staff, notably in the case of women. To ensure continuity of treatment in the

case of sailors who have to proceed abroad, arrangements have already been made by the Medical Officer with the United States Public Health Service to open a Seamen's Service Centre in New York, where seamen of all nationalities can continue treatment under proper conditions. An address card has been issued, to be given to sailors proceeding to New York, as follows:—

Port of Liverpool.

ARRANGEMENTS HAVE BEEN MADE BY THE U.S.
PUBLIC HEALTH SERVICE FOR THE FREE MEDICAL
RELIEF OF SEAMEN OF ALL NATIONALITIES,
ESPECIALLY THOSE AFFECTED WITH VENEREAL
DISEASES AT THE UNDERMENTIONED CENTRE:—

SEAMEN'S SERVICE CENTRE,

"FOR SEAMEN OF ALL FLAGS,"

21, COENTIES SLIP,
NEW YORK, N.Y.

Liverpool Port Sanitary Authority,
April, 1920.

It is hoped to have this arrangement extended to other U.S. and foreign ports.

It has been felt for some time that the next step to control these diseases must be one by which they will be attacked upon the basis of the control of communicable diseases. Many objections have been raised against this legislative control, such as the danger of greater concealment, etc., but the same arguments were brought forward when other infectious diseases were included under the Notification Act.

The Medical Officer's suggestions on this subject, which were confirmed by the Liverpool City Council in June, 1919, and forwarded to Government Departments and others interested, are again included in this Report, and there can be no doubt that such measures applied to these diseases would have good results.

A prosecution under the Venereal Diseases Act, 1917, was undertaken in Glasgow, on the report of one of the Medical Officers attached to a Liverpool Venereal Diseases Clinic, that a patient (a seaman) attending

had been treated by a so-called "Professor" in Glasgow for Syphilis previous to coming to him. This "Professor" was an "unqualified" person, and from the evidence, had been conducting a lucrative business for years. Several other venereal disease patients who were treated by him were discovered by the Glasgow Authorities, and a strong case was presented before Lord Justice Salvesen. The Jury convicted him, and the Judge imposed a sentence of six months' imprisonment.

VENEREAL DISEASES.

Suggestions for further legislation made by the Medical Officer of Health at the request of the Chairman of the Special Venereal Diseases Sub-Committee.

1. That the Bill should be entitled "A Bill to facilitate and Ensure Continuity of Treatment of Patients suffering from Venereal Diseases in a communicable form, and to Prevent the Spread of such Disease."

2. The preamble of the Bill should have reference to the contagious nature, and to the extent of the ravages of Venereal Disease, and to the necessity for such provision.

3. The Clauses should authorise and provide as follows:—

(a) The establishment and maintenance of adequate Centres, and the provision and payment for skilled medical treatment free of charge to the patients themselves.*

(b) Local Authorities to provide such suitable hospital accommodation for Venereal Diseases as may be necessary.

(c) It shall be the duty of every person who knows, or has reasonable grounds to believe, that he is suffering from Venereal Disease, to consult a medical practitioner, and to conform with the requirements of medical treatment.

(d) No person shall knowingly infect any other person with a Venereal Disease or knowingly do or permit or suffer any act likely to lead to the infection of any other person with such a disease. Any person guilty of a contravention of this Section shall be liable to a penalty of not more than £100, or to imprisonment with or without hard labour for not more than twelve months, or to both such penalty and imprisonment.

* This provision is already made, but that is no reason why it should not find a place in the proposed Bill, it would pave the way for the other measures.

(c) It shall be the duty of every medical practitioner who has a case of Venereal Disease under treatment to explain to the patient the nature of his illness, and the necessity for carrying out treatment until cured, and in the event of it being necessary for the patient to discontinue treatment with that practitioner, he shall be transferred to another treatment centre or medical practitioner, and the aforesaid medical practitioner shall furnish the patient with a Treatment Card (provided by the Sanitary Authority), indicating the stage of treatment reached, for the information of the medical practitioner who will continue the treatment.

(f) It shall be an obligation upon the patient to continue his attendance until, in the view of the medical practitioner, he is free from infection, and in the event of a patient discontinuing treatment without assigning a cause whilst, in the opinion of the medical practitioner, he is in an infectious condition, it shall be the duty of the medical practitioner to report the case to the Medical Officer of Health for the district, who shall make enquiries as to the reasons for the patient's non-attendance. In the event of no adequate reason being assigned by the patient for neglect to place himself under or to continue medical treatment, it shall be the duty of the Medical Officer of Health to lay an Information, to be heard before a Court of Summary Jurisdiction, the Court to be empowered to make an Order upon the patient to place himself under the care of the medical practitioner or to resume treatment, unless in the meantime he does so voluntarily.

(g) The terms of Sections 124 and 125 of the Public Health Act, 1897, and Section 65 of the Public Health Acts Amendment Act, 1907, shall be extended so as to apply to persons infringing the foregoing requirements.

(h) Cases shall be heard *in camera*.

(i) It shall be the duty of the parents or guardians of infected persons under 16 years of age to see that they are placed under treatment as prescribed by the Bill.

(j) The remuneration of the medical practitioner on account of the additional obligations imposed by these requirements shall be taken into consideration when fixing the stipends of the officers appointed to the Centres or Institutions controlled by the Local Authority. In the case of private medical practitioners a fee of shall be paid by the Local Authority for each certificate which the medical practitioner finds it necessary to furnish.

4. The provisions of the Bill shall apply equally to both sexes.

TIME TABLE.

| | | |
|--|--|--|
| Royal Infirmary, Pembroke Place. | For Men: New Patients, Monday 12 noon. Wednesday 5 p.m. Friday 12 noon. Clinic for intravenous injections, Monday 4-30 p.m. Continuation treatment for patients every evening 5 to 6, except Saturday Sunday and Monday. For Women: New Patients, Thursday 12 noon. Continuation treatment for patients daily 10 to 11 a.m. except Sunday. | Treatment is given Free of Charge by Qualified Doctors. |
| Royal Southern Hospital, Caryl Street. | For Men: New Patients, Tuesday 5 p.m. Friday 2 p.m. Saturday 1 p.m. For Women: Thursday 5 p.m. Continuation treatment for both Men and Women daily at 5 p.m., except Sunday. On Saturday treatment will be given at 1 p.m. | |
| David Lewis Northern Hospital, Entrance in Leeds Street. | For Men: New Patients, Monday and Friday 5 to 6 p.m. For Women: New Patients, Wednesday 5 to 6 p.m. Continuation treatment for both Men and Women every evening from 7 to 8 p.m. | |
| Stanley Hospital. | For Men: New Patients, Monday and Thursday 5 to 6 p.m. Continuation treatment daily, 6 to 7, except Tuesday, Saturday and Sunday. For Women: New Patients, Tuesday 5 to 6 p.m. Saturday 12 noon. Continuation treatment daily at 11 a.m. except Sunday. | |
| Cancer and Skin Hospital, Myrtle Street. | Daily, 1 to 2 p.m. and Wednesday 6 to 7 p.m. Continuation treatment centre open daily 9 to 10 a.m., 1 to 2 p.m., 6 to 7 p.m., Sundays 11 to 12 noon. | |

Female
Patients
will be
attended by
Women
Doctors.

Treatment can also be obtained at the following centres, viz. :—

| | | | |
|------------------------------|-----------------------------------|-------------|---|
| Birkenhead. | Borough Hospital, Park Road North | For Men ... | Monday, Tuesday, } 6 p.m. (Friday, |
| Bootle. | | | |
| Borough Hospital, Darcy Road | ... | For Men ... | { Monday ... 5-30 p.m. Thursday ... 12 noon. Friday ... 5-30 p.m. |
| | | | |
| | | | |
| Wallasey. | Mill Lane Dispensary | For Men ... | Wednesday ... 6 p.m. |
| Mill Lane Hospital | | For Women | |
| | | | Thursday ... 5-30 to 6-30 p.m. |

EXTENSION OF POWERS OF PORT SANITARY AUTHORITIES.

Conditions resulting from the War have given rise to increased prevalence of such diseases as Smallpox and Typhus in certain foreign countries, and it is fully realised that the risk of importation through shipping is very great.

The Minister of Health has for some time had under his consideration further measures necessary to prevent the introduction of infectious diseases into this country. The Ministry of Health have accordingly issued the Port Sanitary Authorities (Infectious Diseases) Regulations, 1920. These Regulations confer further powers and impose additional duties upon Port Sanitary Authorities and their Medical Officers of Health, requiring in certain circumstances, when the presence of infectious disease on a ship is suspected, a more extended examination of the passengers and crew than has been undertaken hitherto. These Regulations are in addition to and not in derogation of the provisions already existing with respect to Cholera, Yellow Fever and Plague, which will continue, as before, to apply to these diseases.

With regard to the expense incurred in connection with this extended Port Sanitary Administration, the Minister has been in communication with H.M. Treasury on the question of a grant, out of revenue, in respect of an efficient Port Sanitary Administration at a rate not exceeding one-half of the approved net expenditure of Port and Riparian Sanitary Authorities. The grant will be payable in respect of the whole work of Sanitary Administration, including that under the Foreign Meat and Unsound Food Regulations, also work undertaken by Port Sanitary Authorities in connection with the Public Health (Shellfish) Regulations, 1915. It will be payable in aid of expenditure incurred from the 1st August, 1920, the date on which the Port Sanitary Authorities (Infectious Diseases) Regulations, 1920, come into operation. A copy of these Regulations and the conditions under which grants in aid of expenditure are made, will be found in the Appendix.

As in previous years, the various bodies connected with the administration of the Port, viz., H.M. Collector of Customs and staff, the Mersey Docks and Harbour Board and their officers, and the various Shipping Companies, have co-operated with the Port Sanitary Authority in preventing disease, and have worked harmoniously together in every particular. The Consular Body have at all times given courteous assistance.

E. W. HOPE, M.D.

MUNICIPAL OFFICES,

LIVERPOOL, 1st August, 1920.

APPENDIX.

STATUTORY RULES AND ORDERS, 1920, No. 1294.

PORT SANITARY AUTHORITY, ENGLAND.

THE PORT SANITARY AUTHORITIES (INFECTIOUS DISEASES)
REGULATIONS, 1920. DATED JULY 14, 1920.

65244.

The Minister of Health, as successor to the Local Government Board, in pursuance of the powers conferred on him by Section 130 of the Public Health Act, 1875,(a) the Public Health (London) Act, 1891,(b) and the Public Health Act, 1896,(c) and of all other powers enabling him in that behalf, hereby makes the following Regulations:—

1. These Regulations may be cited as the Port Sanitary Authorities (Infectious Diseases) Regulations, 1920, and shall come into operation on the First day of August, 1920.

2. (1) In these Regulations, unless the context otherwise requires,—

“ The Minister ” means the Minister of Health ;

“ Sanitary Authority ” means every Port Sanitary Authority and every Council of a municipal borough or urban or rural district whose borough or district includes or abuts on any part of a Customs port not within the jurisdiction of a Port Sanitary Authority ;

“ District ” means the district of a Sanitary Authority, and in the case of a Sanitary Authority other than a Port Sanitary Authority, includes the waters of any Customs port adjacent to any part of their district ;

“ Medical Officer of Health ” includes any duly qualified medical practitioner appointed or employed by a Sanitary Authority to act in the execution of these Regulations ;

“ Ship ” means a ship in or arriving in a district, and includes a vessel or boat ;

(a) 38-9 V. c. 55.

(b) 54-5 V. c. 76.

(c) 59-60 V. c. 19.

“ Master ” includes a pilot, officer or any other person for the time being in charge or command of a ship ;

“ Infectious disease ” means any epidemic or acute infectious disease ;

(2) The Interpretation Act, 1899,(d) applies to the interpretation of these Regulations as it applies to the interpretation of an Act of Parliament.

3. For the purposes of these Regulations the Medical Officer of Health shall have power to enter or board any ship, and may cause the ship to be brought to, and, if necessary, moored or anchored in some safe and convenient place while it is visited and examined.

4. The Medical Officer of Health may, and if so required by the Sanitary Authority or by the Minister shall,—

- (a) examine any person who is suffering from infectious disease on board a ship ;
- (b) examine any person who is on board a ship, where he has reasonable grounds for believing or suspecting that infectious disease is or may be present on the ship, or that persons on board the ship have been exposed to infection from infectious disease during the voyage of the ship or during a period of three weeks immediately preceding the arrival of the ship in the district ;
- (c) examine any person on board a ship who is reasonably believed to be verminous ;
- (d) detain for the purpose of examination either upon the ship or at some appointed place on shore any person whom he is empowered or required under this Article to examine ;
- (e) cause any such person and the clothing of or any other articles belonging to such person to be cleansed and disinfected ;
- (f) prohibit any such person from leaving the ship, or from leaving the ship save upon such conditions as may be specified in writing by the Medical Officer of Health and appear to him to be reasonably necessary to prevent the spread of infection in the district or elsewhere ;

- (g) require the master to take or assist in taking such steps as, in the opinion of the Medical Officer of Health, are reasonably necessary to prevent the spread of infection by any such person, and for the removal of conditions on the ship likely to convey infection, including the destruction of vermin and the removal of conditions which harbour vermin:

Provided that any directions given by the Minister to the Medical Officer of Health under this Article shall be forthwith communicated to the Sanitary Authorities.

5. (1) The Medical Officer of Health may cause any person on the ship who is suffering from infectious disease to be removed, if his condition so permits, to some hospital or other suitable place appointed for that purpose by the Sanitary Authority.

(2) If the condition of any such person does not permit of his removal as aforesaid, the Medical Officer of Health may, by notice in writing to the master, prohibit his removal or departure from the ship save with the consent in writing of the Medical Officer of Health.

6. The master of any ship shall—

- (a) notify forthwith the Medical Officer of Health of any case of infectious disease on the ship, and of any circumstances on board the ship likely to lead to infection or the spread of infectious disease, including the sanitary condition of the ship and the presence of dead rats or mortality or sickness among rats in the ship;
- (b) furnish the Sanitary Authority and the Medical Officer of Health with all such information as may be reasonably required by them for the purposes of these Regulations;
- (c) comply with any directions or requirements of the Sanitary Authority or the Medical Officer of Health given or made in pursuance of these Regulations;
- (d) give all such assistance to the Sanitary Authority or the Medical Officer of Health as may be reasonably required by them in the execution of their duties in pursuance of these Regulations.

7. Every person on board a ship shall comply with all directions, requirements or conditions given, made or imposed by the Sanitary Authority or the Medical Officer of Health in pursuance of these Regulations, and shall furnish all such information as may be reasonably required by them (including information as to his name, destination, and address), and where any person has for the time being the custody or charge of a child or other person on board a ship who is under disability he shall comply with any directions or requirements so given or made, and shall furnish all such information as aforesaid, in respect of such child or other person.

8. The Sanitary Authority may for the purposes of these Regulations, and if so required by the Minister shall,—

- (a) appoint one or more duly qualified medical practitioners for the purpose of assisting the Medical Officer of Health in the performance of his duties and pay any such practitioner such reasonable remuneration for his services as the Minister may approve;
- (b) appoint or employ with the approval of the Minister such other persons as they may think fit to exercise or perform under the direction of the Medical Officer of Health or otherwise such powers and duties as the Sanitary Authority may assign to them;
- (c) provide or arrange for the provision of—
 - (i) premises and waiting rooms for the purposes of medical examination;
 - (ii) apparatus or means for the cleansing and disinfection of ships, persons, clothing, and other articles;
 - (iii) premises for the temporary accommodation of persons for whom such accommodation is required for the purposes of these Regulations;
 - (iv) hospital accommodation for persons to whom these Regulations are applicable;
 - (v) means of transport;

(d) do all such other things as, in the opinion of the Sanitary Authority or of the Minister, as the case may be, are necessary for the purpose of enabling the provisions of these Regulations to be complied with.

9. Article 3 of the Port Sanitary Authorities (Assignment of Powers) Order, 1912(a) (which relates to the cleansing of berths and cabins), shall be extended so as to apply to the whole of any ship or to any part thereof.

10. The provisions of these Regulations shall be in addition to and not in derogation of the provisions of any Regulations heretofore made by the Local Government Board and at present in force with respect to the powers and duties of Sanitary Authorities and of Medical Officers of Health as herein defined.

11. Any expenses incurred by a Sanitary Authority in the execution of these Regulations shall be defrayed in the same manner as the expenses incurred by them in the execution and discharge of their existing powers and duties.

Given under the Official Seal of the Minister of Health, this
Fourteenth day of July, in the year One thousand nine hundred
and twenty.

L.S.

W. A. ROBINSON,

Secretary, Ministry of Health.

(a) S.R. & O., 1912, No. 1260.

NOTE.—By Section 1 (3) of the Public Health Act, 1896, any person who wilfully neglects or refuses to obey or carry out, or obstructs the execution of any regulation made under Section 130 of the Public Health Act, 1875, or under that Section as extended to London by the Public Health (London) Act, 1891, or as amended by the Public Health Act, 1896, is liable to a penalty not exceeding one hundred pounds, and in the case of a continuing offence to a further penalty not exceeding fifty pounds for every day during which the offence continues.

PORT SANITARY ADMINISTRATION AND MEDICAL INSPECTION OF ALIENS UNDER THE ALIENS ORDER, 1920.

GRANTS IN AID.

Regulations under which the Ministry of Health will pay to Port and Riparian Sanitary Authorities:—

I. Grants in respect of efficient Port Sanitary Administration at a rate not exceeding one-half of the approved net expenditure of those Authorities out of revenue.

II. Reimbursement in respect of approved expenditure incurred by the Authorities of the ports named in the second schedule to the Aliens Order, 1920, in connection with the medical inspection of aliens under that Order.

I.

A. The Ministry of Health will pay grants during each financial year commencing on the 1st April in respect of approved expenditure on Port and Riparian Sanitary Administration under the following heads:—

(1) The approved Medical Staffs (Medical Officer of Health, with deputies or assistants).

(2) The approved staff of Inspectors (Inspectors of Nuisances, Food Inspectors, etc.).

(3) The approved clerical staff and general staff (including rat-catchers, etc.).

(4) The provision and maintenance of office accommodation (medical examination rooms, waiting rooms, etc.).

(5) The provision and maintenance of isolation hospital accommodation for:—

(a) Smallpox;

(b) other infectious diseases;

and accommodation for contacts with cases of infectious disease, persons detained, etc.

(6) The provision and maintenance of cleansing, disinfection and disinfestation stations, provision of disinfecting apparatus for:—

(a) Ships;

(b) Clothing, bedding, etc.

(7) The provision of facilities for chemical and bacteriological investigations.

(8) The provision and maintenance of suitable means of transport for:—

(a) Boarding vessels in port ;

(b) Removing patients to hospitals.

(9) The provision and maintenance of mortuary and post-mortem rooms.

(10) The provision and maintenance of premises and equipment necessary in connection with the examination of food.

(11) Any other services required or approved by the Ministry.

B. Where the services of an officer or the use of an office and other accommodation are shared by the Authority acting both as Port or Riparian Sanitary Authority and as Urban Sanitary Authority an apportionment of such expenditure shall be made to the satisfaction of the Ministry.

C. Application for grants must be made in duplicate on forms to be supplied by the Ministry.

D. The Ministry may exclude any items of expenditure which in their opinion should be deducted before assessing the amount of the grant, and in the event of any question arising as to the interpretation of these regulations, the decision of the Minister shall be final.

E. (i) Payments will be made on account based on the approved estimate of expenditure for the current financial year.

(ii) Final payment in respect of each financial year will be assessed on the basis of the approved net expenditure on the service in that financial year and will be made after the audit of the accounts has been completed.

(iii) In the case of Authorities whose accounts are subject to audit by a District Auditor, the accounts will be examined and certified by the District Auditor.

(iv) In the case of those Authorities whose accounts are not subject to audit by a District Auditor, it will be a condition of the grant that the account of expenditure on the services in respect of which the grant is payable shall be:—

(a) audited by a district auditor, or

(b) audited by a chartered or incorporated accountant if the accounts of the authority are ordinarily so audited.

(v) The final claim should be accompanied by two typed or printed copies of the Abstract of Accounts for the financial year in question.

F. Every application for a grant shall be accompanied by reports in duplicate by the Medical Officer of Health on the Port Sanitary Administration and the Medical Inspection of Aliens during the year ended in the preceding December, and by such further information as the Ministry may require. The Ministry may also direct an enquiry by one of their Medical Officers in any particular case, and may at their discretion withhold or reduce any grant if in their opinion a reasonable standard of efficiency in administration has not been attained.

G. No grant will be made directly in respect of capital expenditure unless the Ministry have previously approved of the expenditure being defrayed out of current revenue.

H. In calculating the amount to be paid under these Regulations the grant already received or receivable by the local authority in respect of half the salary of a Medical Officer of Health or an Inspector of Nuisances will be reckoned as part of the new grant.

II.

Regulations for the reimbursement to the Sanitary Authorities of the Ports named in the second schedule to the Aliens Order, 1920, of their expenditure in respect of the medical inspection of aliens under that Order.

(A) The whole of the approved expenditure of the Sanitary Authority in respect of the medical inspection of aliens will be reimbursed by the Ministry of Health out of moneys voted by Parliament.

(B) Where the services of an Officer or servant are common to:—

(i) Port Sanitary work in respect of which grant is payable under the foregoing Regulations, and

- (ii) The Medical inspection of aliens under the Aliens Order; or, where buildings, plant or other facilities are jointly used for both purposes;

the cost of such services or facilities shall be apportioned as accurately as possible and separate accounts shall be kept for the two purposes.

(c) The provisions of Paragraph I. E. above shall apply equally to the reimbursement of expenditure in connection with the medical inspection of Aliens.

Given under the Seal of the Minister of Health this 14th day of July, 1920.

A. B. MACLACHLAN,

Assistant Secretary,

MINISTRY OF HEALTH.

[9 & 10 Geo. 5.] *Rats and Mice (Destruction) Act, 1919.*



CHAPTER 72.

19. An Act to make further provision for the destruction of Rats and Mice. [23rd December, 1919.]

Be it enacted by the King's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

1. Any person who shall fail to take such steps as may from time to time be necessary and reasonably practicable for the destruction of rats and mice on or in any land of which he is the occupier, or for preventing such land from becoming infested with rats or mice, shall be liable on summary conviction to a fine not exceeding five pounds, or, where he has been served with a notice under this Act requiring him to take such steps, not exceeding twenty pounds.

2.—(1) The following local authorities shall execute and enforce this Act; that is to say,—

- (a) In the city of London, the common council;
- (b) In any metropolitan borough, the borough council;
- (c) In any administrative county (other than the county of London) or county borough (except any part thereof which is a port sanitary district), the council of the county or borough;
- (d) In any port sanitary district, the port sanitary authority:

Provided that the London County Council shall, to the exclusion of any other authority, be the local authority for the purpose of executing and enforcing this Act with respect to the sewers vested in, and the sludge vessels belonging to, that council; provided also that a county

council may, with the consent of the council of any borough or county district in the county, delegate its powers and duties under this Act to that borough or district council, and, where powers and duties have been so delegated, the borough or district council shall be the local authority for the purpose of this Act.

(2) The expenses incurred by the local authority under this Act shall be defrayed in the case of a county out of the general county fund, and in the case of a port sanitary authority as part of their expenses as a port sanitary authority, and in any other case as expenses incurred by the local authority in the execution of the Public Health (London) Act, 1891, or the Public Health Act, 1875, as the case may be.

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3.—(1) Where a local authority having power to enforce this Act fails, in respect of land of which it is the occupier, to comply with the provisions of section one of this Act or fails, in respect of land for which it is the local authority under section two of this Act, to execute or enforce any of the provisions of this Act, the Board of Agriculture and Fisheries may by order empower the person therein named to enter upon such land and to execute and enforce those provisions or to procure the execution and enforcement thereof.

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(2) The expenses incurred by or on behalf of the Board by reason of any such default of a local authority shall be paid to the Board on demand by the treasurer or other proper officer of that local authority, and in default of payment the Board may recover the amount of such expenses (except in so far as such expenses are otherwise recoverable under this Act) from the local authority; and any sum paid by a local authority under this section shall be defrayed as expenses under this Act.

(3) For the purposes of this section, any statement contained in an order of the Board that a local authority has failed to comply with, execute, or enforce any of the provisions of this Act shall be conclusive evidence of such default, and a certificate by the Board of expenses incurred under this section shall be conclusive evidence of such expenses.

4. A local authority having power to enforce this Act may from time to time, by public notice within its area, give instructions as to the most effective methods that can be adopted, both individually and collectively, with a view to the destruction of rats and mice.

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5.—(1) Where a local authority having power to enforce this Act is of opinion that the occupier of any land in its district has failed to take such steps as are required by section one of this Act, such local authority may either serve a notice on the occupier requiring him to take such steps as are prescribed in the notice within a time specified therein, or, after not less than twenty-four hours previous notice to the occupier, enter upon the land and take such steps as are necessary and reasonably practicable for the purpose of destroying the rats and mice on the land or of preventing the land from becoming infested with rats and mice, and may recover any reasonable expenses so incurred from the occupier of the land summarily as a civil debt.

(2) A local authority in the exercise of its powers under this section shall, as far as possible, take or secure collective action for the destruction of rats or mice.

(3) The powers of a local authority under this Act may be exercised by any committee of the local authority to which the exercise of those powers may be delegated.

(4) Any person authorised in writing by a local authority under this Act, or by a person empowered to act in default of a local authority, may enter any land in the district of such local authority for the purpose of ascertaining whether the steps required by section one of this Act are being taken or of executing and enforcing this Act in any other respect. Any such person must produce the document by which he is authorised if so required.

(5) Any person who shall obstruct or impede an officer or other person authorised as aforesaid in the execution of his duties or powers under this Act, or who, being the occupier of any land, shall fail to comply with any reasonable requirement of any such officer or other authorised person for facilitating the execution of his duties or powers, shall be liable on summary conviction to a fine not exceeding twenty pounds.

6.—(1) This Act shall apply to a vessel as if the vessel were land, and the master of the vessel shall be deemed to be the occupier thereof.

(2) A local authority having power to enforce this Act may, by notice served on the master of a vessel in its district, require him to take such necessary and reasonably practicable steps as are prescribed by the

notice for preventing the escape of rats and mice from the ship, and, if a master fails to comply with the requirements of any such notice served on him, he shall be liable on summary conviction to a fine not exceeding twenty pounds.

7.—(1) A prosecution for an offence under this Act shall not be instituted except by or with the authority of the Board of Agriculture and Fisheries or the local authority: Provided that this section shall not apply to Scotland. Prosecution.

(2) In any proceedings under this Act a notice purporting to be signed by the clerk of a local authority shall, unless the contrary is proved, be deemed to have been signed by the clerk with the authority of the local authority.

8. In this Act—

The expression “occupier” means, in the case of land not occupied by any tenant or other person, the owner of the land; Interpretation.

The expression “land” includes any buildings and any other erection on land, and any cellar, sewer, drain or culvert in or under land.

9.—(1) This Act shall apply to Scotland with the following modifications:— Application to Scotland.

(a) The Board of Agriculture for Scotland shall be substituted for the Board of Agriculture and Fisheries:

(b) The section of this Act relating to the enforcement of the Act shall not apply, and in lieu thereof the following provisions shall have effect:—

(i) The local authority for executing and enforcing this Act shall be the local authority under the Diseases of Animals Acts, 1894 to 1914;

(ii) The expenses incurred by any local authority under this Act shall be defrayed in like manner as expenses incurred by a local authority under the Diseases of Animals Acts, 1894 to 1914.

(2) This Act shall apply to Ireland with the following modifications:—

(a) Any reference to the Board of Agriculture and Fisheries shall be construed as a reference to the Local Government Board for Ireland:

(b) Subject to the exercise of the powers of delegation given to a county council by this Act, the local authorities for the purposes of this Act shall be, as respects so much of any administrative county or county borough as is not included in a port sanitary district, the council of the county or borough, and as respects any port sanitary district the port sanitary authority:

(c) The expenses incurred by a local authority under this Act shall be defrayed, in the case of a county council, out of the poor rate as a county at large charge; in the case of a port sanitary authority as part of their expenses as such authority; and in the case of any other local authority as expenses incurred in the execution of the Public Health (Ireland) Acts, 1878 to 1919.

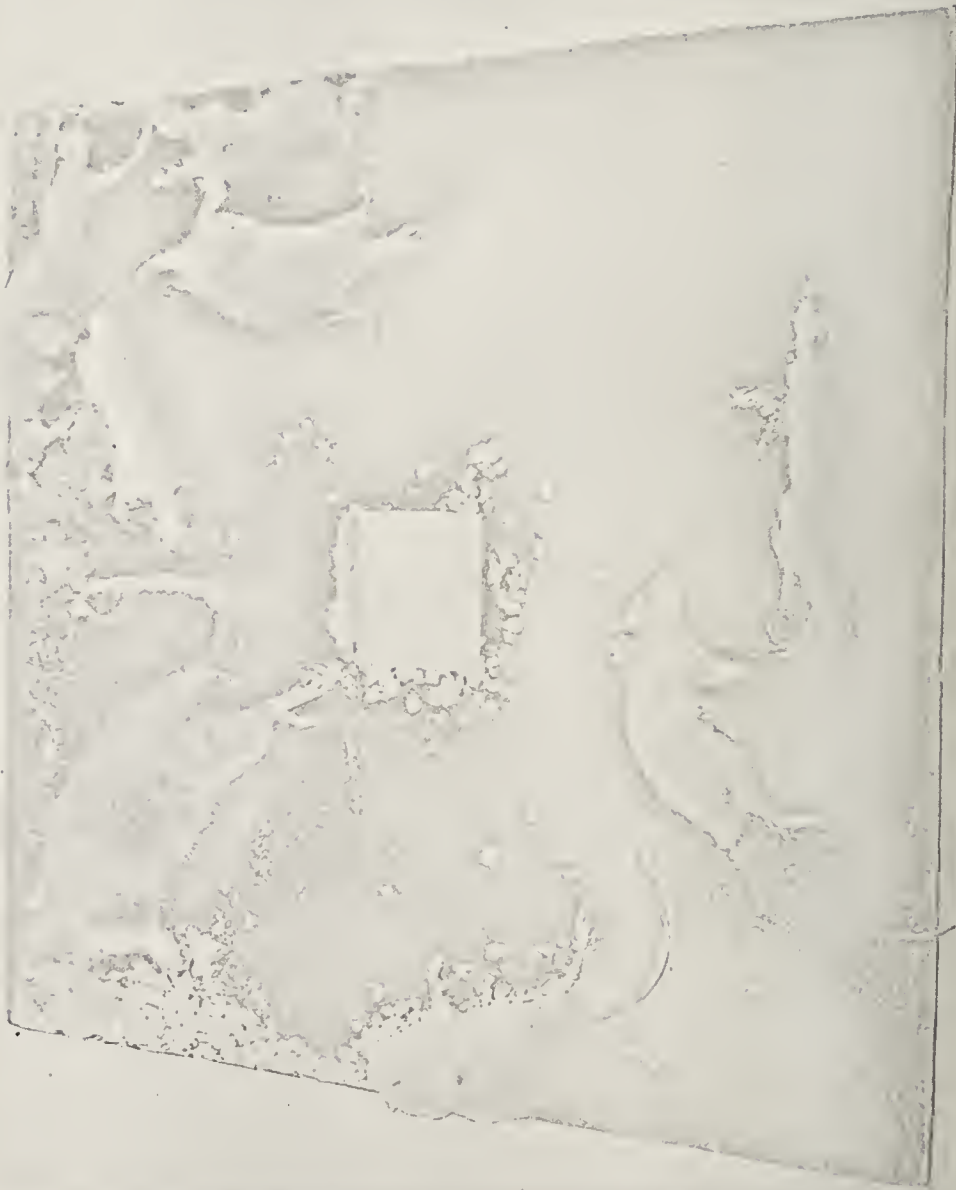
10. The powers conferred by this Act shall be in addition to and not in derogation of any powers conferred on any Government department or local authority, and all such powers may be exercised concurrently in respect of any land.

11. Any notice under this Act may be served either personally or by registered post.

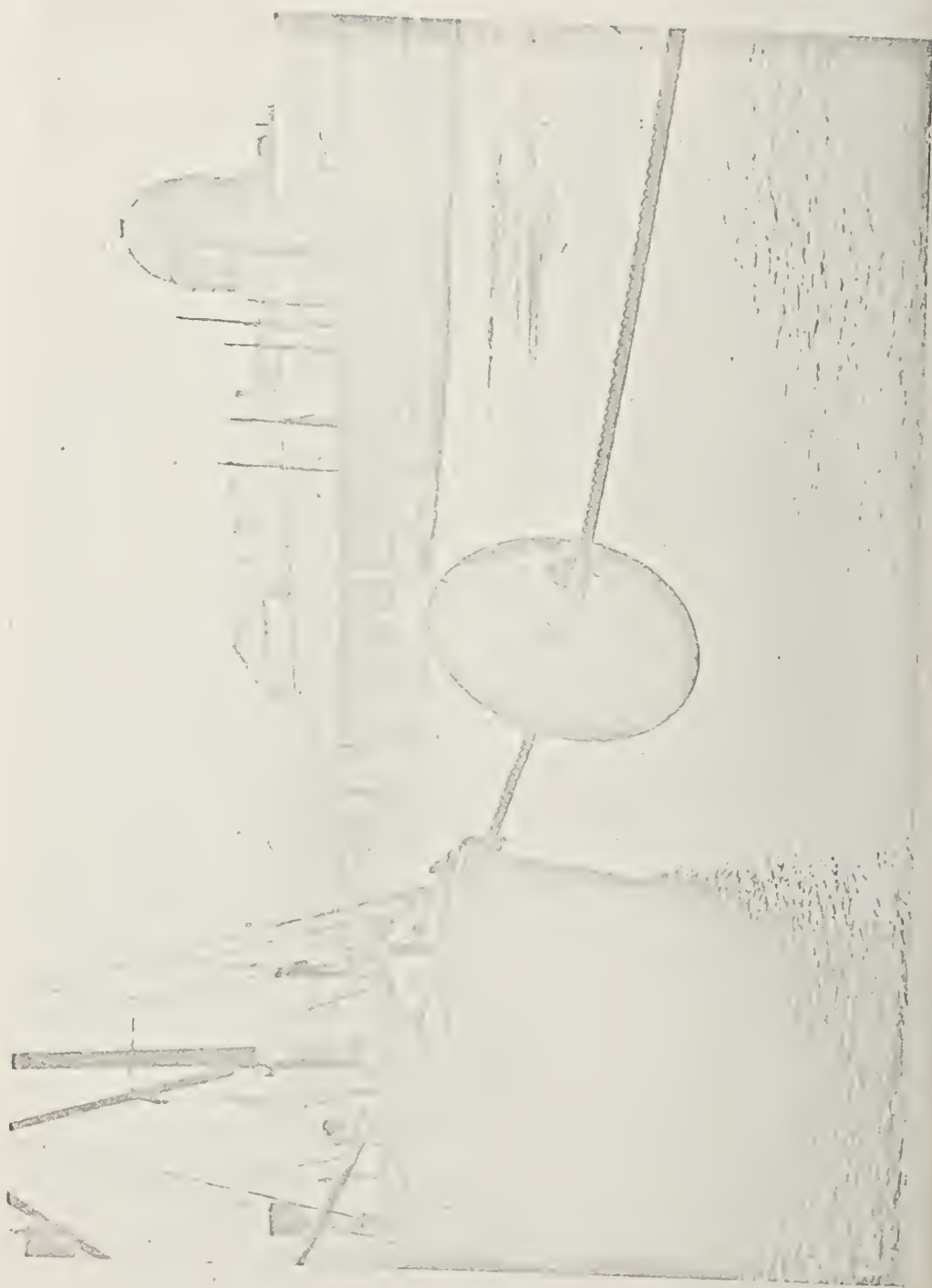
12. This Act may be cited as the Rats and Mice (Destruction) Act, 1919, and shall come into operation on the first day of January nineteen hundred and twenty.



RAT SEARCHERS IN SPECIAL UNIFORM AND EQUIPMENT.



A METHOD OF DESTROYING RATS USED IN LIVERPOOL FOR MANY YEARS.
RATS CAUGHT BY A SPECIAL BIRDLIME OR VARNISH SPREAD ON THE ROOFS.



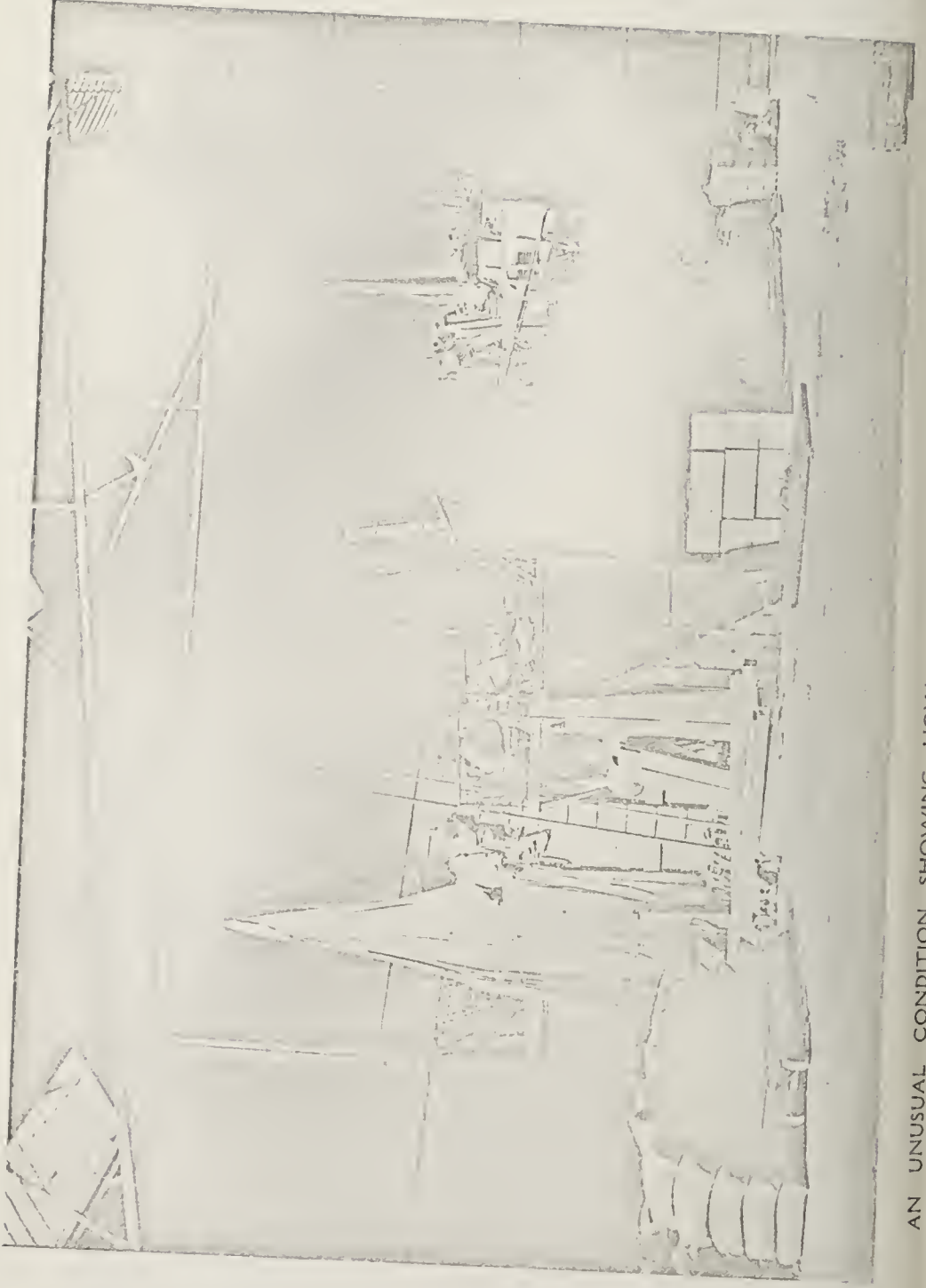
AN IMPROVED TYPE OF RAT GUARD.—A RAT UNABLE TO CROSS.



RAT CROSSING AN OLD TYPE OF RAT-GUARD.



AN IMPROVED TYPE OF RAT-GUARD:—A RAT UNABLE TO CROSS.



AN UNUSUAL CONDITION SHOWING HOW ACCUMULATIONS OF SHIPS STORES AFFORD SHELTER FOR RATS IN AN OTHERWISE OPEN SPACE

